NETWORK WORLD

The Newsweekly of Enterprise Network Strategies

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UB, BBN join on ATM for Access/One

By Maureen Molloy
Senior Writer

SANTA CLARA, Calif. — Ungermann-Bass, Inc. will announce this week a partnership with BBN Communications Corp. to jointly develop ATM capabilities for Ungermann-Bass' Access/One intelligent hub.

Ungermann-Bass and BBN are expected to develop an Asynchronous Transfer Mode (ATM) switching module for the Access/One, an ATM adapter card for workstations and an interface that will link the hub to a BBN ATM switch. The products will help users deploy ATM across an enterprise net, with the Access/One handling local ATM switching and passing ATM traffic to the BBN device for transport over a wide-area network.

Michael Howard, president of Infonetics Research, Inc., a consultancy in San Jose, Calif., said most major hub vendors are plotting aggressive ATM strategies. However, Ungermann-Bass' partnership with BBN may enable it to deliver products more quickly than other vendors developing

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Kash n' Karry's Van Overbeke, Stikeleather and Springer (l. to r.)

Intrepid user braves risks of distributed object world

Kash n' Karry stores try to break new ground.

By Wayne Eckerson
Senior Editor

TAMPA, Fla. — Grocery chains are not usually viewed as information technology pioneers, but a 112-store chain here is blazing a trail into distributed computing territory that larger and better known companies are likely to follow.

Kash n' Karry Food Stores last year embarked on a five-year project to replace its IBM mainframe and host-based applications with an open, distributed object computing architecture. The architecture is built on Unix processors linked by a fiber net and employs innovative new object computing technology.

It is designed to enhance systems flexibility so the company can become more nimble in an increasingly competitive marketplace. The architecture will give Kash n' Karry the ability to launch new promotions or lines of business, such as floral shops, pharmacies and bakeries, without major systems changes.

It will also reduce systems de-

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SynOptics readies LattisNet upgrades

New backplane and switching module adds to Ethernet support; positions hub in work group role.

By Skip MacAskill
Staff Writer

SANTA CLARA, Calif. — SynOptics Communications, Inc. this week is expected to announce enhancements that give its LattisNet System 3000 hub support for five Ethernets as well as a new switching module that improves throughput.

The switching module — based on Kalpana, Inc.'s EtherSwitch product — is the first of its kind to be housed in a local-area network hub. It will enable users to dedicate full Ethernet bandwidth to critical devices such as LAN servers and boost overall net performance by providing high-speed links between LAN segments.

"This announcement is significant for users because it enables them to move from a single, flat Ethernet to a high-performance Ethernet environment without jeopardizing their investment," said Don Bergal, product marketing manager for internetworking at SynOptics.

SynOptics' enhanced hub, the LattisSwitch System 3000, is intended to be housed in a wiring closet and support surrounding work groups. It consists of several new modules and a new back-

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INSIDE FEATURES

Designing nets to shuttle images around is not such a daunting task after all. Page 43

DEC set for unveiling of E-mail tools

By Jim Duffy
Senior Editor

PARIS — Taking a page out of Soft-Switch, Inc.'s book, Digital Equipment Corp. this week will unveil Unix-based electronic mail software to attract users looking to implement nonproprietary, multivendor messaging networks based on low-cost processors.

At the European Electronic Mail Association show here, DEC will unwrap Mailbus 400, a set of three software packages that adhere to the 1988 X.400 messaging standard and run on DEC's Reduced Instruction Set Computing (RISC) platforms under Ultrix. The products include a message transfer agent (MTA) — software that routes messages across a network — a gate-

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NETLINE

NEWBRIDGE TO SHOWCASE high-powered circuit/packet switch. Page 2.

IBM PULLS PLUG on OfficeVision/2 LAN, moves to Lotus Notes, cc:Mail. Page 2.

SQL ACCESS GROUP Phase II spec boosts performance, adds net options. Page 15.

COMPAQ TO BUNDLE NetWare with its new server management tools. Page 15.

AIRFARE WAR results in swamped call centers. Page 15.

PEERLOGIC ADDS NetWare, OS/2, AIX support to distributed system pack. Page 50.

SOFT-SWITCH unveils Unix-based E-mail switch that supports X.400. Page 63.

NEWSPAPER

NEWS FEATURE

Taking a hard look at toll fraud protection services

By Daniel Briere
and Tracey Cullen
Special to Network World

Seeking to redress long-standing user complaints about inattention to the problem of toll fraud, AT&T and Sprint Corp. in recent weeks have unveiled fraud monitoring and liability protection plans covering a broad array of their services.

Toll fraud is big business these days, and it costs users dearly. Estimated losses from toll fraud range from $500 million to $4 billion a year, and users can be — and often are — held liable for large sums when they become victims. Some users have been hit with fraud tabs of more than $500,000 in a single month.

Given that, it's not surprising that customers are praising AT&T's and Sprint's new services. But before signing up for any service, users need to explore the carriers' approaches to toll fraud protection — along with that of MCI Communications Corp. — and understand just what is and what isn't covered.

Sprint's new SprintGuard Plus, announced in March, joins SprintGuard CPE Security and SprintGuard SprintNet, programs

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Newbridge to unveil frame relay switch for hybrid nets

The company's MainStreet 36120 can act as either a backbone node or central office switch.

By Jim Duffy
Senior Editor

HERNDON, Va. — Newbridge Networks, Inc. next week will demonstrate a new integrated packet/circuit switch that offers greatly increased support for frame relay traffic with throughput of 100,000 frame/sec.

At the SuperComm show in Chicago, Newbridge will show off its MainStreet 36120 Packet Transfer Exchange, which combines a 120M bit/sec packet switching bus with a 64M bit/sec circuit switching bus and supports 128 T-1 and five T-3 interfaces.

The 36120 is designed to function as either a backbone node supporting packet- and circuit-switched facilities in private user nets or as a carrier's central office switch supporting switched or dedicated services including frame relay.

The 36120 supports the same circuit switching functions as Newbridge's 3600 and 3645 multiplexers, but its 120M bit/sec Fastbus packet switching bus offers far more packet processing power. The 3600 and 3645 only support frame relay throughput of 30,000 frame/sec.

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OfficeVision/2 dies; Notes, cc:Mail rise from the ashes

Decision is a result of poor user acceptance.

By Michael Cooney
Senior Editor

WHITE PLAINS, N.Y. — It's official: OfficeVision/2 LAN is dead.

In stark contrast to the fanfare with which it was announced only three years ago, IBM quietly stated in a customer letter last week that it will no longer sell OfficeVision/2 LAN and will market Lotus Development Corp.'s Notes and cc:Mail in its place, ending months of speculation about the fate of the struggling product ("IBM to pull the plug on its OfficeVision/2" *NW,* April 27).

IBM said the decision to replace OfficeVision/2 LAN was based on greater user acceptance of Notes and cc:Mail in their local-area network environments.

OfficeVision was the first of IBM's Systems Application Architecture products, designed to run on and provide consistent application and user interfaces across the company's three major platforms — the Personal System/2, Application System/400 and System/390

IBM did not detail how it would integrate Notes and cc:Mail with other OfficeVision products, saying only that it

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GTE Telephone to begin offering SMDS in October

By Bob Wallace
Senior Editor

IRVING, Texas — GTE Telephone Operations last week became one of the first carriers to detail its Switched Multimegabit Data Service (SMDS) deployment and pricing plans.

GTE Telephone said it plans to offer its service, dubbed MegaConnect, in the Los Angeles area beginning in October and in seven additional cities next year, including Dallas, Honolulu, Portland, Ore., Beaverton, Ore., Raleigh-Durham, N.C., Seattle and Tampa, Fla. Beyond that, the company will expand service based on demand.

"We are confident there is user demand for SMDS in the major cities in our territory," said Wehlan Mixon, senior SMDS product manager for GTE Telephone, which provides local telephone service in 40 states.

The firm will use three AT&T Network Systems' Broadband Networking Switch (BNS)-2000 cell relay switches to offer SMDS in the Los Angeles area. The service will support T-1 access but will be enhanced to support T-3 access when new BNS-2000 interface boards become available lat-

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Briefs

Banyan names president/CEO. Banyan Systems, Inc., the Westborough, Mass., maker of the VINES local-area network operating system, last week named Peter Hamilton president and chief executive officer.

Previously, Hamilton was general manager of three Hewlett-Packard Co. organizations: the Colorado Networks Division, the Systems Management Division, and the OpenView Network and Systems Management Program. He will take over the day-to-day operations at Banyan in early July from David Mahoney, who will continue in his roles as chairman and CEO. The addition of a new operations executive is seen as a key step in the company's expected move to go public later this year.

Factory-installed networking. Dell Computer Corp. last week announced plans to factory-install Novell, Inc.'s NetWare 3.11 on its server and workstation products in order to meet the specific needs of customers. The Austin, Texas-based company will configure networks ranging from as few as five end users to as many as 250 — the current maximum NetWare allows. Dell will even go so far as to define user information and precable the server, client and peripheral nodes.

According to Novell, this announcement represents the first time NetWare will be factory-installed to customer specifications. Although the company previously offered preinstalled NetWare Lite, this announcement represents its first foray into NetWare integration and customization.

Net/Master gains another new roost. Systems Center, Inc. this week announced it will port its Net/Master family of network management products to Hitachi, Ltd. mainframes. Net/Master will run on Hitachi's VOS3 mainframe operating system and allow Hitachi users to manage their nets from a central location. Hitachi users will also be able to develop their own network management applications using Net/Master's Network Control Language software, the company said.

Hitachi joins AT&T, Fujitsu, Ltd., Digital Equipment Corp. and Tandem Computers, Inc. on Systems Center's alliance list.

MCI International enhances MCI Mail. MCI International, Inc. last week announced a new pricing structure for MCI Mail, as well as support for text and binary file transfer and access speeds at up to 9.6K bit/sec. Under the pricing structure, effective July 1, there will be a base 50 cents message charge, plus incremental charges for blocks of over 1,000 characters. On average, message prices will be cut by 8%.

Binary file support is made possible by the addition of Zmodem and Kermit file-transfer support. MCI plans to announce support for other file-transfer protocols in next few months.

Telco Systems details switch plans. Telco Systems, Inc. last week detailed plans to build two multiplexers that consolidate traffic from time-division multiplexers and Asynchronous Transfer Mode switches onto a single Synchronous Optical Network transmission system. The HyperLynx 150, which has a 150M bit/sec bus, and the HyperLynx 600, with a 600M bit/sec bus, will be introduced within the next 18 months.

In a separate action, Telco Systems announced the acquisition of internetworking company Magnalink Communications Corp. Telco Systems already owned 30% of Magnalink, an interest it used to help develop its frame relay products.

CONTACTS

We want to hear from you. *Network World* has set up a toll-free number you can use to leave news tips or letters to the editor. Let us know what's going on or how you feel about the stories you read in our publication by calling (800) 622-1108, Ext. 487.

NW Bulletin Board System. Contact us electronically. Our BBS lets you submit letters to the editor, pass on tips, leave change of address requests, interact with other readers, download free software and hunt for jobs. You can use your IBM, Apple or other microcomputer to reach the BBS at 300 to 2,400 bit/sec (8N1) by dialing (508) 620-1160 or at speeds up to 9.6K bit/sec by dialing (508) 620-1178.

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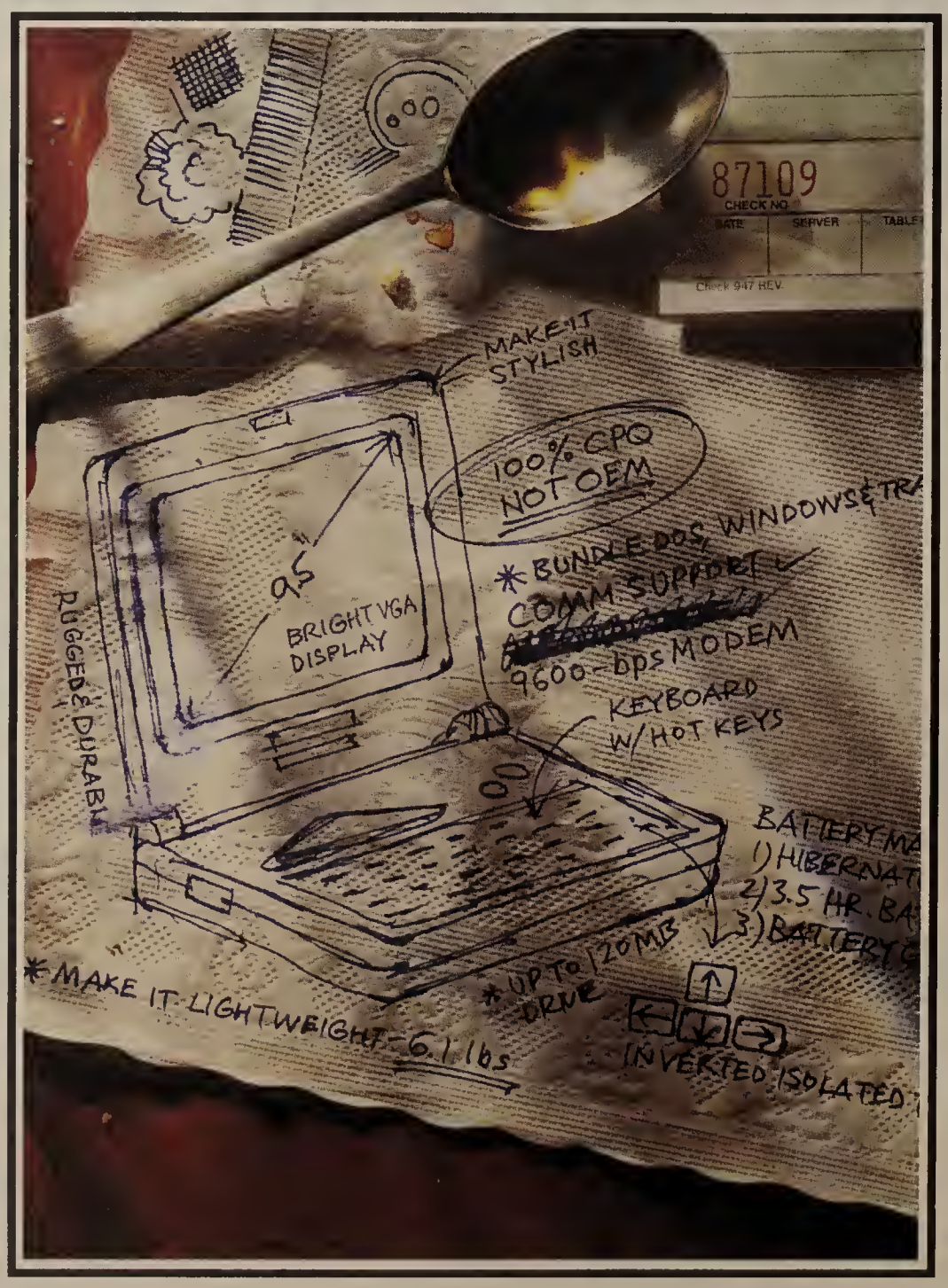
Article and chart reprints (minimum 500 copies) can be ordered from Donna Kirkey, Network World, Inc., 161 Worcester Road, Framingham, Mass. 01701-9172; (508) 875-6400.

Back issues ($5 per issue) can be ordered from Bobbie Cruise by calling (800) 622-1108.

PEOPLE IN THE COMPUTER BUSINESS HAVE BEEN TRYING TO IMPROVE ON COMPAQ FOR YEARS.

GUESS WHO FI

It wasn't easy. Changing a company our size never is. But we listened to our customers, we studied our competitors, we took a good, long look in the corporate mirror and did the only thing we know how to do. We rolled up our sleeves and went to work.



The result of all this work will begin appearing in the weeks to come.

That's when you'll see new prices, new customer service and support, new methods of distribution and, of course, new products from Compaq.

From inexpensive machines for the most basic computing needs to advanced products that stretch the envelope of computing technology at prices that our customers will find quite compelling and our competition will find, well, competitive.

What you won't see are stamped-out, second-rate boxes with the COMPAQ name stuck on at the end of somebody else's assembly line.

While that may be the way of the world, it's certainly not the COMPAQ way.

We still believe today what

NALLY DID IT?

we have always believed.

That a PC's overall performance, compatibility, reliability, and ultimate affordability has a lot more to do with innovation than with imitation.

So instead of asking 1200 of the finest computer engineers in the world to forget their experience, forget their beliefs, forget everything they knew about building great computers, we chose to take a different approach. We asked them to take all that knowledge and ability and build great inexpensive computers.

Engineering to cost versus engineering at any cost.

And as the best engineers are wont to do, they saw this not as a limitation to their creativity and spirit, but rather, as a new kind of challenge. A new hurdle to overcome. A new problem to ponder, twist, push, pull and ultimately, to solve.

They questioned standard manufacturing techniques, they challenged all of our suppliers, they poked and prodded and turned every aspect of every process upside down, inside out and sideways until they had managed to shake out every unnecessary cost or component.

No more over-think.

No technology simply for the sake of technology.

And along the way to our new improved destination, we learned something that our most loyal customers probably knew all along.

We learned that what makes a COMPAQ PC more than just another computer isn't simply the engineering. Or component quality. Or design. Or testing.

It's not even more tangible qualities like our reputation for complete compatibility or near-zero defect production runs or the dozens of other examples you'll be reading about in greater detail on the following nine pages of this advertisement.

In the end, what makes a COMPAQ PC more than simply another computer can be summed up in a single word.

Passion.

The passion to push technology, the passion to recognize an idea whose time has come, the passion not just of those 1200 engineers, but of an entire company, to listen and learn and adapt to whatever the customer may want today while anticipating what they might need tomorrow.

In short, the passion to do things right for the customer.

COMPAQ

AT MOST COMPUTE
STANDS FOR REPLIC

It's hard to believe, but at some PC companies the engineering department is nowhere to be found. Which stands to reason, since most other computers aren't engineered, they're copied. And as with all copies, something gets lost in the translation.

What happens when companies lack the engineering depth and expertise to make new things happen?

You guessed it... new things don't happen.

A fact that few people understand better than the 1200-plus engineers working at Compaq.

The very same engineers who developed the first portable computer with dual-mode monitor and set an industry standard for compatibility. And the world's first desktop computer with concurrent bus.

The same engineers who designed and delivered the first 386 computer. And managed to break the 32-MB barrier in hard-drive technology.

And that's just for starters.

So what, you might be asking, have we been up to lately?

R COMPANIES, R&D
ATE AND DUPLICATE.

Among other things, we've just introduced the world's first lightweight 386SL/25 notebook PC with 120-MB hard drive and full desktop expansion capability.

Compaq engineers have also recently developed highly sophisticated Windows accelerators, and have conducted extensive testing to optimize the performance of Windows 3.1 on every COMPAQ PC.

A test that other companies will undoubtedly leave you to perform on your own.

We've even been designing new enhanced fault-tolerance features into our drive array adapters to make data reconstruction and retrieval easier, more automatic and less disruptive to normal operation.

And as you read this we're working on dozens of other new computing ideas.

Some will arrive next week. Some will arrive next year.

Some may change the way you look at computers forever. Others will simply make next year's COMPAQ products work a little bit better.

And finally, some will be just the kind of ideas our competitors have been looking for.

Ideas that wouldn't occur to them, however, until they looked inside a COMPAQ PC.

COMPAQ

VARIETY MAY BE
BUT TO A COMPUTER
THE KISS

If you've ever attempted to put together a computer network, even a relatively simple one, you know what we mean. It can be time consuming. Nerve wracking. Sometimes even traumatic. And that's assuming that everything goes according to plan.

Now obviously, variety is a fact of life when dealing with networks. There's probably not a single LAN in existence that doesn't include a few PCs from one company, some more from another, and still more from a third. (Not to mention an assortment of peripherals, interface cards and various network operating systems.)

And, being a proponent of PC technology, we're certainly not recommending that you completely scrap your existing hardware and start over with strictly COMPAQ products.

We do recommend though, that as your needs expand, you think a little differently about how you approach your next PC purchase.

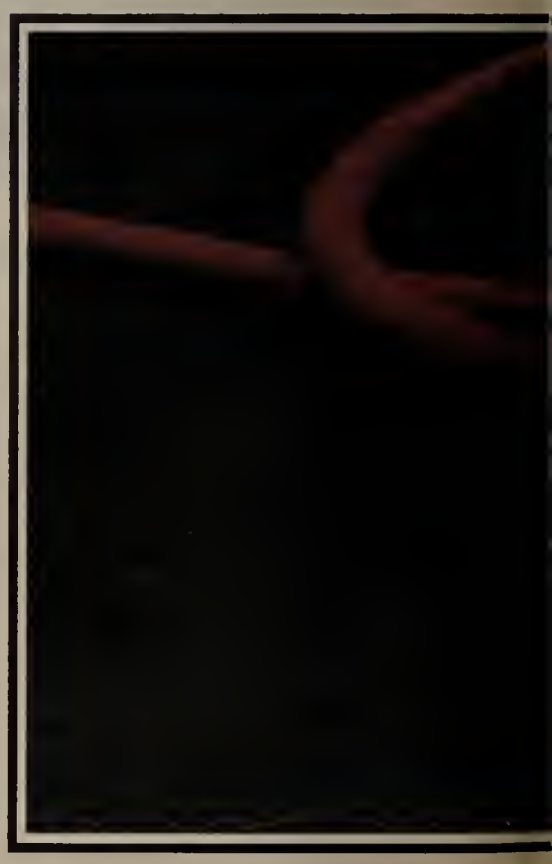
Because, as you may have noticed, when you throw a variety of bargain-basement components together and subject them to the increasingly complex demands of network environments, compatibility problems arise.

It's a lot like being at a bad cocktail party. Nobody talking to anybody and everybody blaming the person who brought them together.

And suddenly you realize your well-thought-out, master-minded network has turned into a house of cards hit by a rather stiff breeze.

On the other hand, of course, there's Compaq.

Unlike other companies, at



Compaq we have an entire group of engineers who are dedicated exclusively to testing network and communications

THE SPICE OF LIFE, NETWORK, IT COULD BE OF DEATH.

hardware and software.

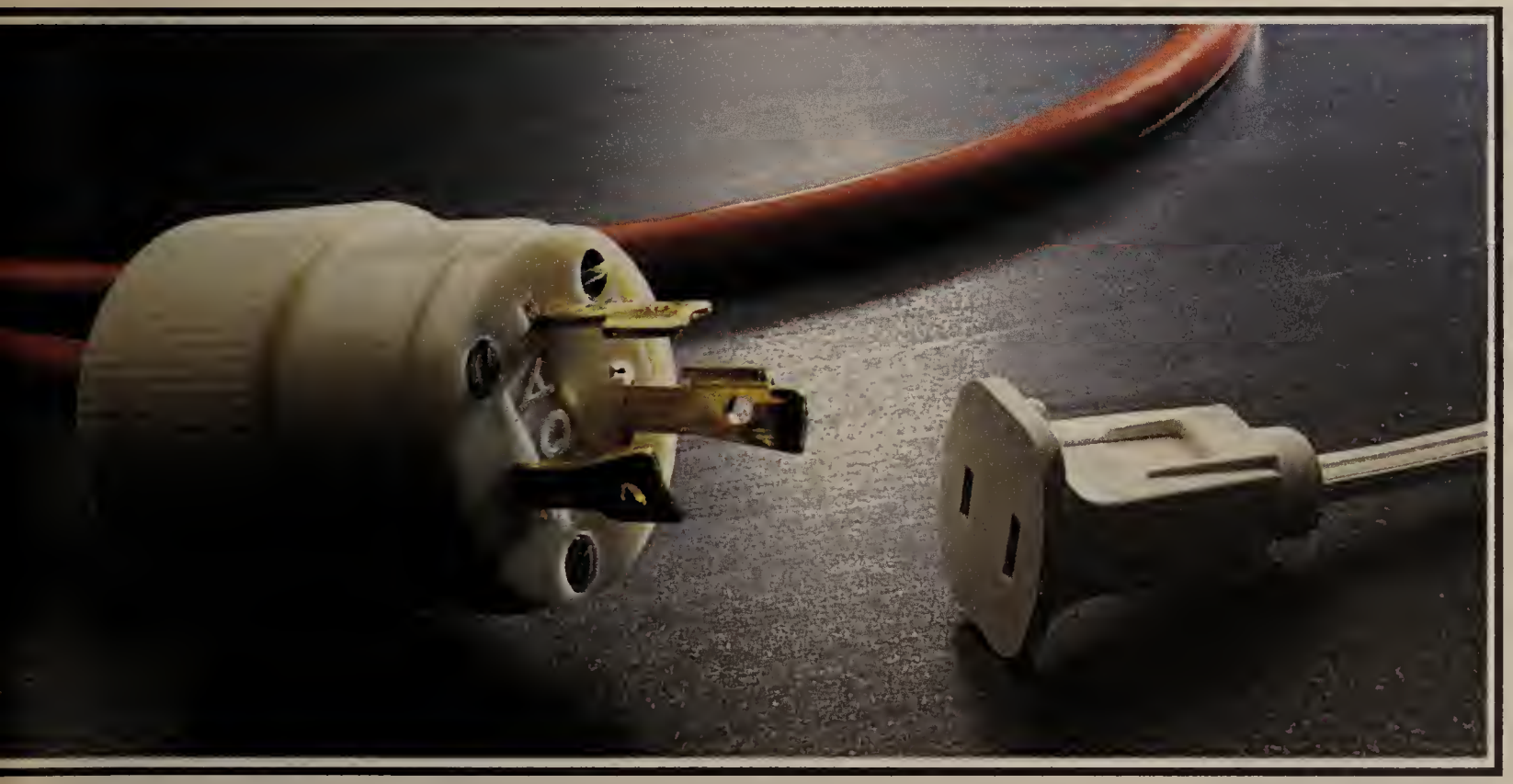
In addition, we have teams of engineers who continually monitor the performance of our computers within network environments. Working with many of the world's major software companies including Novell, Banyan, SCO, Microsoft, and others, they test all COMPAQ products in very active, multi-user network environments for hours, days and even months on end.

And to make system integration even easier, we offer the COMPAQ ToolKits and TechNotes, the most highly sought-after guides in the industry for multi-vendor network installations.

As a result, you can be sure that you're getting products which have been designed, engineered and tested to operate within even the most complicated network environments.

In short, products built by a company dedicated to solving computer network integration problems in our offices.

That way you don't end up having to solve them in yours.



COMPAQ

What You Do With A Co
The Fact That You Migh

Not long ago, Denise Anderson of Morrison, Colorado, left her COMPAQ notebook PC in, of all places, her driveway. When next seen, the 6.9-pound computer had become a speed bump for 1.3 tons of automobile. When next used, it started up fine.

Now, that may have come as a surprise to Denise. But at Compaq, it didn't cause so much as a raised eyebrow in the engineering department.

After all, when a PC is designed to withstand the slings and arrows of today's hectic business world, a small thing like a traffic mishap is all part of a day's work.

In fact, if you happened to walk into the Compaq testing laboratories, what you'd see is the stuff a computer owner's worst nightmares are made of.

Computers that are being subjected to the kinds of conditions you're only likely to encounter during the height of

MPUTER IS YOUR BUSINESS.
T ACTUALLY DO IT IS OURS.

summer in the Sahara Desert.

Or during the middle of the night in an Arctic winter.

Humidity, temperature, power-cycling and thermal-shock tests performed while the unit is up and running, not just for a few hours, but for days and weeks to simulate years of normal use.

Computer keyboards being pounded and punched literally millions of times, often with dust, dirt, ashes and other kinds of contaminants dumped into their workings.

Portable and notebook PCs being opened and closed up to 20,000 times to ensure the integrity of the hinges.

And dropped over and over again from terrifying heights, right onto even their most vulnerable corners.

Just to make sure that your notebook computer can survive a couple of unattended hours stuck inside the trunk of your car on a hot day.

Or the power surges of your electrical system.

Or even the occasional heavy-handed operator.

But the important part of the story isn't simply that we put our products through one of the most rigorous testing programs in the entire computer industry.

The important part is that every product we build is engineered to survive it.

That means the reliability, serviceability, and ultimately, the affordability, are designed into every product we build right from the outset.

Not merely added on as an afterthought.

Which means conducting extensive thermal simulations to determine the absolute optimum locations and positions for critical components and cooling devices.

And electrostatic discharge protection integrated into the computer system from the very beginning.

It means consistency of component quality from one production run to the next. And to the one after that.

It means, quite simply, that the ultimate goal of every Compaq designer and engineer is to build a product that works, and keeps right on working, no matter what.

A product, in other words, that won't break down under the pressures of today's complex business world.

Even when the pressures amount to all of 1.3 tons.

COMPAQ

FOR SERVICE AND SUPPO
ARE NOT STANDING

With our new service and support program, what you need is what you get. In fact, our technical support staff resolves 95% of all calls in under 15 minutes. And for questions that require greater expertise, we have engineers ready to get on the line.

The above is only a part of CompaqCare, the comprehensive new program designed to provide you with everything you need in the way of service and support.

Quickly, efficiently and, most of all, easily.

Our free one-year, on-site* limited warranty, for example, covers just about anything that could possibly happen to your COMPAQ hardware, anywhere it happens in the U.S. or Canada. And, unlike most competitors' programs, our new on-site warranty covers every product we build.

And no matter where you take COMPAQ portable or notebook PCs, they're backed by our worldwide, one-year, carry-in warranty.

So wherever your business happens to take you—from Tokyo to Turkey, Britain to Berlin—you can feel perfectly comfortable taking your COMPAQ portable computer along with you.

We also give our users plenty of flexibility.

So much so, in fact, you can choose from any of over 2000 Authorized COMPAQ Reseller service locations.

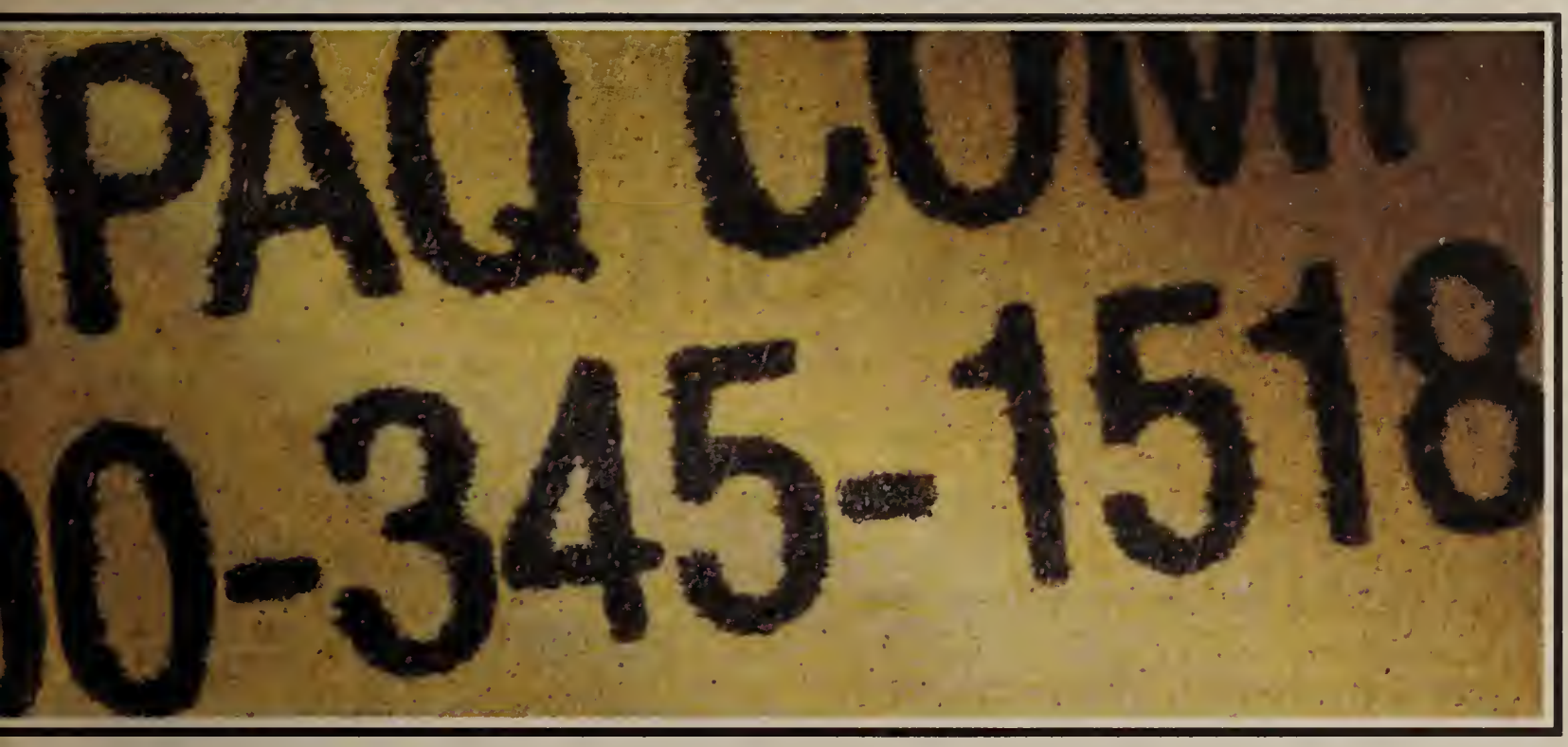
Or, if it's more convenient, call us directly for service.

For those companies with support technicians already on staff, we've designed a self-maintainer program that gives you access to all the support resources you need to help in performing whatever service you find necessary.

Of course, while increasing the scope of our warranty programs has certainly been a priority, we've also been working on many other important aspects of customer support.

When you have any questions, for example, the Compaq

RT, JUST CALL. OPERATORS BY. ENGINEERS ARE.



SMART System provides all of our support personnel with a sophisticated information bank comprised of countless hours of troubleshooting and engineering expertise.

All of which means the person who answers your call is certain to provide you with consistent, smart answers to your questions.

And quickly take care of even your most pressing hardware problem.

We even have on-line access with most of the major software companies.

That way we can help you understand and take care of any software-related difficulties you may encounter.

You'll also be gaining 24-hour electronic support via three different services:

CompuServe, which offers you an on-line dialogue with Compaq technicians. PAQFax, a new fax-based information retrieval system. And finally, QuickFind, our CD-ROM technical reference library.

If, after all of the above, you're still not entirely convinced that our new service and support program is one of the most comprehensive in the industry, call us on it.

1-800-345-1518.

On the other end of the phone, you'll find a whole bunch of Compaq people who are just looking for trouble.

COMPAQ

A Thought For Those Who Appreciate The Value Of A Dollar As Well As The Value Of A Compaq.

"Now that we've made clear what we stand for, let us make it clear what we won't stand for anymore. High prices. We have a new mission. A new goal.

To provide you with all the Compaq quality, Compaq reliability, Compaq research and development, Compaq testing and customer service and support at the most competitive prices possible.

In other words, products that are exactly what you need, that are easy to find, and that are priced right.

That's what Compaq is all about today.

For the details on all of the above, yes even on the prices, just call us at 1-800-345-1518, Ext. 205, in the U.S., and in Canada call 1-800-263-5868, Ext. 205.

We think you'll like what we have to say."

–Eckhard Pfeiffer
President, CEO
Compaq Computer Corporation

SQL Access Group rolls out Phase II technical specs

Improves performance, adds TCP/IP support.

By Timothy O'Brien
West Coast Bureau Chief

SANTA CLARA, Calif. — The SQL Access Group, a consortium of leading database companies, last week announced completion of its Phase II Technical Specification which builds on the first offering by improving performance and adding broader network support.

Phase II establishes a call-level interface (CLI) standard and adds Transmission Control Protocol/Internet Protocol networking support as an alternative to Open Systems Interconnection protocols.

The SQL Access Group specifications are designed to provide heterogeneous database interoperability by enabling any client front end that is compliant with the specifications to work with any compliant server database.

Five companies — Digital Equipment Corp., Information Builders, Inc., Microsoft Corp., Must Software International, Inc. and Retix — have in the past few months already announced products that comply with the Phase II specification.

"We are now in a position where this specification will be the basis of what clients will use to access a database server," said Howard Cohen, vice-chairman of the SQL Access Group.

Alternative to API

The CLI is an alternative application program interface (API) to the embedded SQL or proprietary interfaces database application programmers often use today.

In its Phase I specification, the SQL Access Group was criticized

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Compaq resells NetWare, unwraps new SystemPros

By Caryn Gillooly
Senior Editor

HOUSTON — Joining the ranks of such heavy hitters as IBM, Compaq Computer Corp. this week will announce it is reselling Novell, Inc.'s NetWare network operating system, which will be bundled with Compaq's new server management tools.

The company will also bring out enhanced models of its SystemPro servers and will officially announce its server management strategy, which the company discussed at the recent INTEROP 92 Spring show.

According to Ronnie Ward, director of product development at Compaq, the company will not only be reselling NetWare 3.11, but will be bundling in other products for a more comprehensive server management package. NetWare 3.11 from Compaq will include the NetWare 3.11 version and Compaq's Insight Manager, Performance Management TechNote and NetWare Programs.

Compaq's Insight Manager is a Microsoft Corp. Windows-based application that resides on a NetWare server. It presents a graphical view of all servers and lets a user monitor hardware components within each device. Compaq Management Agents are required on each server to be managed.

Performance Management TechNote includes configuration recommendations for Compaq servers within a NetWare environment and provides guidance for analyzing NetWare network performance and status. NetWare

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Vendors cook up recipes for using ISDN successfully

By Anita Taff
Washington Bureau Chief

GAITHERSBURG, Md. — In an effort to stimulate usage of services based on National ISDN-1, a group of vendors meeting here last week began work on a "cookbook of recipes" for ISDN customers.

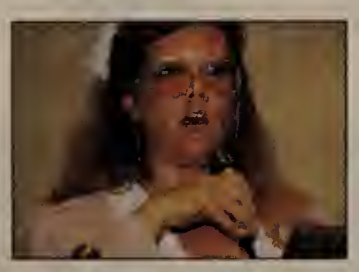
PHOTOS ©1992 WALTER CALAHAN
Jim Briggs

The cookbook, or application catalog, will contain all the information users need to implement Integrated Services Digital Network applications. It includes hardware, software and network service requirements, configuration diagrams, technical parameters such as protocols and transmission speeds and a list of vendors offering the necessary components.

The catalog will initially focus on 17 data applications that can be supported with National ISDN-1, a nationally agreed-upon version of the ISDN standard available this year, and the enhanced National ISDN-2, available in late 1993.

A draft of the catalog obtained by *Network World* indicates the applications will include local-area network interconnect, videoconferencing, at-home customer service agents, calling number delivery, replacement of leased lines and point-of-sale support.

Such a catalog is desperately needed, according to both users and vendors, because ISDN generally requires users to piece together equipment, software and services from multiple vendors. Several users last week said that one of the keys to promoting more universal use of ISDN is better education and training for customers.



Cynthia Wilson

Jim Briggs, telecommunications manager for Eastman Kodak Co., said that a technical catalog for ISDN applications will be enthusiastically welcomed by users. "The lack of such a catalog has been a barrier [to ISDN use]," he said.

Cynthia Wilson, a computer specialist at the U.S. Naval Air Warfare Center, agreed that more information about building ISDN applications is necessary. She is currently evaluating several ISDN applications and has run into numerous roadblocks caused by a lack of vendor knowledge.

"When it comes to implementing ISDN, I have had the experience that implementors don't always know what needs to be done," Wilson said.

For example, she was told by a vendor that she could hook computers to ISDN phones via the RS-232 port and have the phone act as the net interface.

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Fare wars put squeeze on airline nets, call centers

By Bob Brown and Bob Wallace
Network World Staff

The friendly skies have been far from friendly over the last few weeks, as carriers have bloodied each other in a brutal fare war that has resulted in a flood of traffic for the airlines' call centers and strained computer reservation systems.

Call centers at major carriers like American Airlines, Inc., Continental Airlines Corp., Delta Air Lines, Inc. and Northwest Airlines, Inc. were swamped with traffic from customers, many of whom suffered through repeated busy signals and long periods on hold to make low-cost flight plans. The airlines had to hustle to keep up with the huge influx of calls by adding agents and keeping centers open round the clock.

The big spike in calls to airline reservation centers helped AT&T set a new call handling record with 177.4 million calls last Monday, 170.7 million on Tuesday, 165.2 million on Wednesday and 164.1 million on Thursday. The previous record of 157.8 million was set on December 2, 1991, the Monday after Thanksgiving.

An AT&T spokesman said over half the calls were toll-free calls.

Northwest started the war over a week ago by offering a free ticket for any adult traveling with a child and American responded by announcing 50% discounts on its lowest fares. Continental and Delta have since launched their own airfare promotions.

As a result, the airlines were forced to add scores of agents to their reservation centers and extend operating hours to handle the calling volume.

"Our bookings have tripled since [our] promotion began," said a spokesman for American.

While many people called to buy reduced rate tickets, others called to cancel existing reservations and book new flights, which requires two transactions instead of one.

"The name of the game is to answer calls as quickly as possible," the spokesman said. "But the combination of the enormous amount of calls and the longer talk-time made it extremely difficult for people to get through to a customer service rep."

A spokeswoman for Delta said the company had its agents work longer hours and return from days off, vacation and even retirement to answer calls at its 21 call centers across the country.

Nineteen of the centers — which are normally open six hours a day — are being kept open around the clock to handle record call volumes.

Worldspan, an Atlanta-based reservation net owned by Delta, Northwest and Trans World Airlines, Inc., broke internal records last week for both the average number of inquiries made by travel agents per second and total number of inquiries handled in a 24-hour period.

"At peak times, we were seeing levels of activity roughly three times what we would see on an average day," a Worldspan spokesman said.

Groupware pack helps LAN users coordinate activities

By Wayne Eckerson
Senior Editor

TUCSON, Ariz. — Chronologic Corp. last week introduced an aggressively priced groupware package that works with most popular local-area network operating systems.

Instant Recall Office is server software that lets as many as 256 LAN-attached users coordinate activities by sharing schedules, assignments and tasks, contact names, notes and other information on a real-time basis. The software, which costs $125 or less per network user, runs on Novell, Inc.'s NetWare, Banyan Systems, Inc.'s VINES and other Network Basic I/O System-compatible nets.

Instant Recall Office consists of a proprietary database that can store up to 30 pages of text per entry. It lets a group of users or a project team keep track of one another's schedules, assignments, due dates and research notes, among other things.

For example, a user can prompt Instant Recall Office to

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Correction: The May 18 Guide to Strategic Purchase Decisions, "Looking for true openness in a closed world," omitted the biography of one of its authors. Paul Li is a manager in the Network Strategies practice of Ernst & Young in Fairfax, Va.

UDS brings more to the table in the V.32 *bis* modem game

	Max Thruput	Rack-Mountable	V.25 *bis* Autodial	Dial Backup	Remote Config.	Call Security	LCD Display
UDS V.3229	57.6K	●	●	●	●	●	●
Digicom 9624E+	38.4K	●	●	●			●
Hayes Ultra 144	38.4K		●				
Microcom QX/4232 *bis*	38.4K	●				●	
U.S. Robotics Courier V.32 *bis*	38.4K	●					
Telebit T3000	57.6K	●			●	●	

Registered trademarks are the property of their respective owners.

Modems that comply with the CCITT V.32 *bis* recommendation (and there are lots of them) share some common characteristics: 14.4 kbps basic rate, with compressible automatic fallback speeds; V.42 *bis* and MNP® level 5 data compression; sync or async full-duplex operation over two- or four-wire circuits and Hayes "AT" auto-dialing.

As these similarities drive value-conscious modem buyers to look beyond the common features, the search for added performance advantages brings them to the UDS V.3229.

In addition to the "standards," UDS offers a suite of features—automatic dial back-up, remote configuration capability, call security etc.—that is simply not available in competitive models.

If you're a modem buyer who understands that there's more to value than just price, UDS will happily rig the V.32 *bis* game in your favor.

For detailed specifications and a winning price/performance quote, contact UDS at

800/451-2369

UDS
MOTOROLA

Worth Noting

"Mainframe communications software has to be made network-centric rather than mainframe-centric. Vendors who don't understand that will just fade away."

Frank Dzubeck
President
Communications Network Architects, Inc.
Washington, D.C.

Data Packets

Connective Strategies, Inc. has brought out an Integrated Services Digital Network adapter card that performs data transfers at 128K bit/sec over dial-up lines.

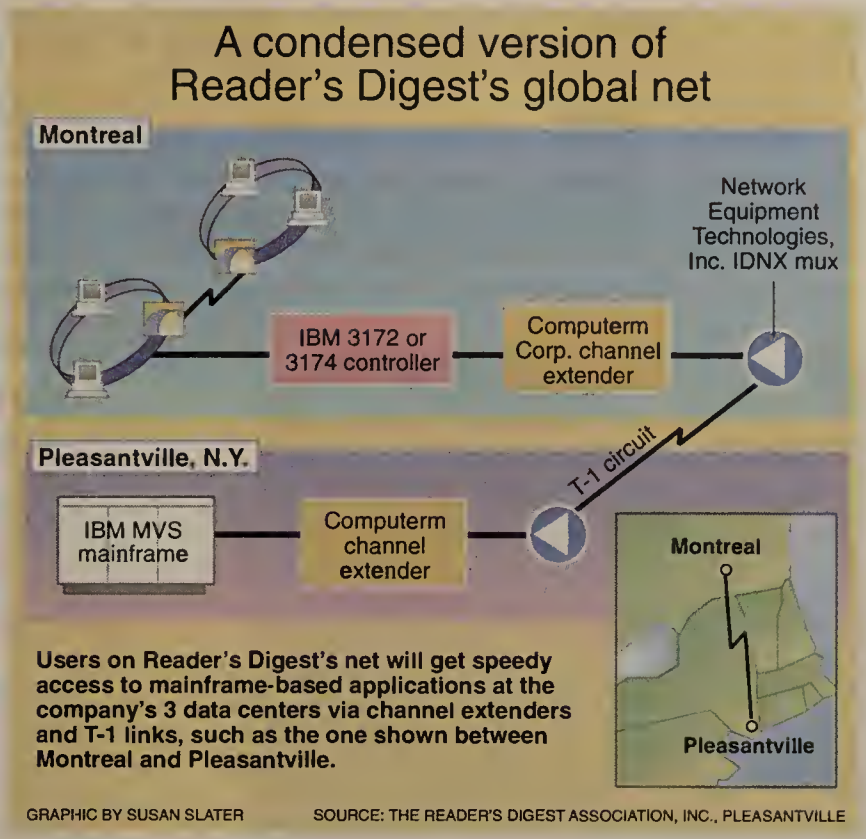
The ISDNAccelerator Basic Rate Interface card can be used with existing personal computers, local-area networks and software. The card achieves 128K bit/sec transmission by combining two ISDN Basic Rate Interface channels from local carriers.

The card fits into any IBM Personal Computer AT or compatible. It is priced at $1,275 and is available now.

Gandalf Systems Corp. has unveiled new software for its Unix-based network management system that automatically locates devices on a network and displays them on a topological map.

Release 1.2 of Gandalf's Access Manager also includes Management Information Base extensions for internetworking devices from Advanced Computer Communications, Cabletron Systems, Inc., Cisco Systems, Inc., Proteon, Inc. and SynOptics Communications, Inc.

Priced at $17,000, Release 1.2 is available now.



Reader's Digest plots global net, data center merger

Three centers to run common set of applications.

By Jim Duffy
Senior Editor

PLEASANTVILLE, N.Y. — The Reader's Digest Association, Inc., renowned for its condensed versions of best-selling books, is condensing its data center operations and building a global LAN internetwork that will make it easier for employees to share applications.

The publishing giant is consolidating 17 data centers currently supporting different equipment and operating systems into three centers. The centers will run a common set of promotion, fulfillment and billing applications — dubbed the Customer Information Management System (CIMS) — on identical computing platforms.

In addition, it is replacing terminal-to-host networks at the 17 current data center locations with local-area networks that will be able to access applications on the IBM hosts at the three data centers as well as share information over a new bridge/router network.

When the new network is in place, end users will be able to quickly access a range of subscriber applications and databases. In addition, because the applications will be based on a common computing platform, Reader's Digest will be able to shave system administration and maintenance costs and roll out business in new areas, said Neil Hennessy, director of corporate communications for the publishing house.

"Everyone could roll out businesses as they are needed," Hennessy said.

The data centers will be located here, in Australia and in the U.K. The data center here will serve Reader's Digest operations in Canada, Hong Kong, Mexico and the U.S., while the U.K. center will serve 10 European countries. The Australian site will serve the Far East and South Africa as well as Australia.

Today, each of Reader's Digest's 17 data centers has its own IBM mainframe running either MVS, VM or DOS/VSE. Users can only access the subscriber applications on their local mainframe through 3270 terminals or personal computers on LANs linked to the mainframes via gateways.

But when the network and data center consolidation is completed, some 4,000 employees worldwide will have access to IBM MVS mainframes at any of the three data centers, each of which will support the range of CIMS applications.

Users currently working on terminals will be equipped with IBM Personal System/2s on Token-Ring LANs running Novell, Inc.'s NetWare.

The LANs will be connected to

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IBM enhances LU 6.2 support in NetView

New transport facility promises to give users ability to monitor and control non-SNA devices.

By Michael Cooney
Senior Editor

NEW YORK — A full-blown LU 6.2-based transport facility in the next release of IBM's NetView will change the way SNA users manage non-SNA service point devices and third-party developers build management applications.

The facility lets NetView use LU 6.2 to carry net management data between service points, giving NetView support for non-Systems Network Architecture equipment. NetView/PC is the best known IBM service point implementation.

The LU 6.2 support will give users more information about and better control of non-SNA equipment. It will also let third-party software developers create more efficient, easier to use net management applications.

IBM revealed the LU 6.2 feature at INTEROP 92 Spring and said it would be shipped with NetView Version 2 Release 3, scheduled for December availability.

In IBM SNA terms, a service point translates network management data from non-SNA devices into NetView-compatible formats and feeds it to NetView.

The LU 6.2 facility lets NetView operators issue RUNCMD run commands, which can be used to control and monitor remote non-IBM devices, over LU 6.2 sessions.

LU 6.2 sessions will replace the System Services Control Point (SSCP)-to-physical unit (PU) sessions over which IBM Network Management Vector Transport (NMVT) message types are transmitted to gather management data from non-SNA devices via a service point. The RUNCMD will replace the NMVT.

NetView Version 2 Release 2 had limited LU 6.2 features. LU 6.2 could be used to feed management data and alarms from the downstream device to NetView,

(continued on page 18)

DEC unveils Unix OLTP offerings

By Jim Duffy
Senior Editor

MAYNARD, Mass. — Digital Equipment Corp. has rolled out products that allow users of Unix systems to build applications and manage data in transaction processing environments.

DEC's new TPframe software enables users to develop Unix-based transaction processing applications. Another new product, StorageServer 100, is software that automatically stores data on the most optimum medium, depending on how frequently it is accessed.

TPframe runs on DEC's Reduced Instruction Set Computing-based DECsystem workstations. It combines DEC's Ultrix/SQL relational database, which is based on Ingres Corp. technology, with Unix International, Inc.'s Tuxedo System/T transaction processing monitor. This software synchronizes the tasks involved in a transaction and logs the results in a database.

The TPframe tool kit includes sample transaction processing applications with instructions for creating executable versions of the programs, thereby easing application development, DEC said.

StorageServer 100, meanwhile, runs on a RISC-based DECsystem server. It ensures that the most frequently accessed files are stored on magnetic media, while those used less frequently are stored on optical media.

StorageServer 100 combines file server software, one or more optical jukebox libraries and a DECsystem server. Total storage capacity ranges from 20G to 125G bytes of data.

TPframe Version 1.0 is priced at $3,530 for a license on the DECsystem 5100. StorageServer 100 prices start at $66,700, which does not include the DECsystem hardware, or Pathworks for Ultrix or Network File System client software. Both products are available now.

IBM enhances LU 6.2 support in NetView

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but NetView could not act on the problem because bidirectional communication was not supported. That was a big hole in IBM's non-SNA management strategy, according to analysts and software developers.

"In the past, we've done this with SSCP-to-PU sessions using NMVTs," said Bill Irlbeck, an advisory programmer and lead designer for NetView. "The LU 6.2 RUNCMD facility gives users more network configuration flexibility."

Previously, in order for NetView to manage non-IBM nodes, the nodes had to be directly connected to the front-end processor through a NetView/PC-type of service point. Now service points located anywhere in a network can feed information directly to NetView via LU 6.2.

"IBM is moving toward using LU 6.2 as the transport mechanism for management data and abandoning the old NMVT format," said Dave Passmore, vice-president and service director for Gartner Group, Inc.'s local-area communications service in Stamford, Conn. "It's more efficient, and it positions IBM for its move to managing the whole enterprise with [Common Management Information Protocol] over LU 6.2."

Vendors said the LU 6.2 support will greatly enhance IBM's support of non-IBM equipment and give third-party vendors an interface for which they can develop applications.

"With this release of NetView, we finally have something flexible and powerful enough to develop useful applications with," said Ron Hardy, director of marketing at International TeleManagement (ITM) in Vienna, Va. ITM's MAXM net management application lets users gather data and automate commands from NetView or other net management systems.

Hardy said the new facility will let MAXM gather more specific information about downstream non-SNA devices and send it up to NetView.

IBM declined to identify other vendors working on the LU 6.2 service point implementation, but Brixton Systems, Inc., Lexcel and Proteon, Inc. acknowledged that they will move to the new facility.

Reader's Digest plots global net

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IBM controllers with Token-Ring couplers that will be connected to Computerm Corp. channel extenders. Tape drives and printers will also be linked to the data centers through the channel extenders.

T-1/E-1 multiplexers from Network Equipment Technologies, Inc. (NET) will connect the channel extenders between data centers and remote sites. The channel extenders will be used in place of local and remote front-end processors (FEP), Hennessy said. Channel extenders provide better throughput than FEPs — two-tenths of a second as opposed to two seconds.

"We want to guarantee that the individual sitting at the end of the terminal is running as good as, if not better than, he does today with his computer center down the hall from his office," Hennessy said.

The LANs, meanwhile, will be interconnected via bridges, routers or bridge/routers using 64K bit/sec links. Reader's Digest has not settled on a vendor for the internetworking gear yet, he said.

The publisher also has not decided whether to funnel the LAN-to-LAN traffic over the NET network or deploy a separate backbone. Reader's Digest is evaluating NET's LAN/WAN Exchange bridge/router modules and high-speed switched services from international carriers for transport of the LAN internet traffic, Hennessy said.

The desktop systems on the LANs will be running terminal-emulation software to pull data off the hosts and integrate it with Microsoft Corp.'s Excel and Lotus Development, Inc.'s 1-2-3 spreadsheet applications as well as Borland International, Inc.'s Paradox databases.

The king-size database is one of the reason's Reader's Digest selected MVS as the IBM platform on which to standardize, Hennessy said. The other reasons are the processing power and rich application programming environment it provides, he added.

But programming is one task Reader's Digest would like to reduce. Even though the subscriber applications at each data center perform the same functions, they run under three incompatible operating systems. Maintaining three operating environments makes application programming more timely, cumbersome and expensive, especially when rolling out business in a new area.

New businesses will become easier once the MVS mainframes start running CIMS. Reader's Digest will not have to program and maintain three versions of the same application.

Worth Noting

More than half of the LAN sites surveyed in a recent study by International Data Corp., based in Framingham, Mass., are planning to implement products with a redundant array of inexpensive disks (RAID) in the future.

Netnotes

Novell, Inc. officials last week confirmed that the company will not offer a 1,000-user version within its NetWare 3.X line but will offer a 1,000-user version of NetWare 4.0. Analysts stressed that a 1,000-user version would not be viable in a computer-intensive environment, as users requesting large files from a database or running other high-end applications could bring down the server.

Hewlett-Packard Co. last week added two new 16-bit Ethernet adapters to its EtherTwist family of network adapter cards. The HP 27247B PC-LAN Adapter/16TP Plus is designed for 10Base-T networks, while the HP 27252A PC-LAN Adapter/16TL Plus is designed for thin-wire coaxial cable Ethernet networks.

Both come with drivers for Novell, Inc. NetWare 2.X and 3.X, Microsoft Corp. LAN Manager 2.1 and Banyan Systems, Inc. VINES 4.1 clients. The cards are available now at $320 for the twisted-pair version — or $245 per card in packs of six — and $299 for the coaxial cable version.

HP also released the HP 4995A LanProbe II, a version of its LanProbe net monitor that supports the Simple Network Management Protocol RMON Management Information Base. That version will be available in September, with prices starting at $2,595.

Network General rolls out Sniffer analyzer for FDDI

Latest version geared for FDDI-based backbones.

By Caryn Gillooly
Senior Editor

MENLO PARK, Calif. — Network General Corp. last week brought out a new version of its Sniffer Network Analyzer that will let customers more closely monitor and analyze FDDI nets.

The new FDDI Sniffer Analyzer is geared toward larger, corporate nets where a Fiber Distributed Data Interface backbone is used to connect multiple local-area networks, according to Network General, based here. With the new product, customers will be provided with full decodes of more than 140 protocols for more thorough net analysis and troubleshooting.

FDDI Sniffer Analyzer consists of a board and software that fits into a Compaq Computer Corp. portable computer, either alone or along with existing Ethernet and token-ring Sniffer boards and software. However, because Compaq's portables only have two expansion slots, customers cannot have all three boards in one machine at the same time.

"All three software components can fit in one machine, but the portable has the two-slot physical limitation," said Lori Harmon, product-line manager for Sniffer Network Analyzer. "But customers can always physically take one board out and replace it with another if they need to troubleshoot a particular network segment. You don't need to buy two portables."

The FDDI Sniffer software collects information specific to FDDI networks. For example, it provides a decode of FDDI Station Management packets, which makes it easier for administrators to isolate network faults.

FDDI Sniffer Analyzer software supports both dual- and single-attached stations. Board and software for a single-attached implementation costs $18,500, while board and software for a dual-attached implementation costs $21,000. Both are expected to be available by the end of this month.

New NetWare LAN backup tools bow

By Caryn Gillooly
Senior Editor

FRESNO, Calif. — Emeritus Technologies last week brought out a new version of its Novell, Inc. NetWare-based tape archival management system that offers improved memory management, more efficient transmission and extended client support.

TapeWare 4.0 is an archival management system that includes backup software for unattended backup of network files to a tape archival subsystem and a database library to keep track of those files, said Bob Reese, chairman and chief executive officer of Emeritus, based here.

The primary TapeWare software requires 384K bytes of memory on the NetWare server but no extended memory. That is a decrease from the 640K bytes of memory, plus extended memory, required for Version 3.0, he said.

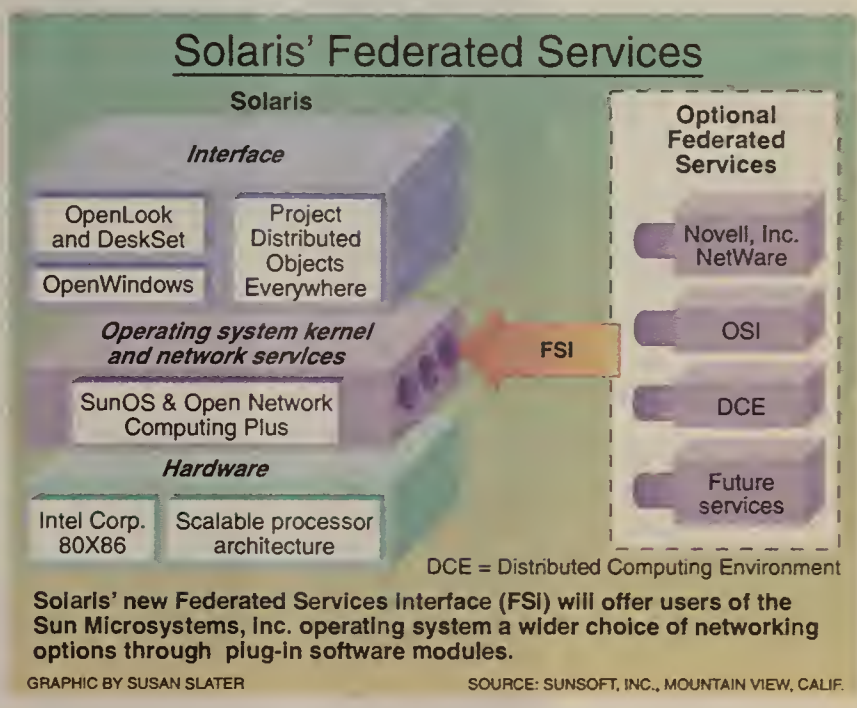
Each workstation an administrator wants to back up requires a terminate-and-stay-resident (TSR) program that uses about 18K bytes of memory.

That improved memory management is particularly important for client workstations, Reese said, because they can also run the primary server-based backup software if they require frequent backups.

In addition, TapeWare now supports Novell's new Burst Mode Protocol technology. "The Burst Mode support lets us back up 11M byte/min over an Ethernet network," Reese said. "Previously, that number was only about 4M to 5M byte/min."

Finally, TapeWare 4.0 supports Microsoft Corp. Windows-based clients, whereas the previous version could only back up individual hard drives for DOS clients. Future versions will be able to back up local Unix and Apple Computer, Inc. Macintosh hard drives, Reese said.

TapeWare 4.0 is available now at a price of $195 for a single DOS-based user version and $1,295 for a network version.



Solaris' new Federated Services Interface (FSI) will offer users of the Sun Microsystems, Inc. operating system a wider choice of networking options through plug-in software modules.

GRAPHIC BY SUSAN SLATER — SOURCE: SUNSOFT, INC., MOUNTAIN VIEW, CALIF.

SunSoft to expand Solaris' net options

Introduces interface to open company's Unix to a variety of file, security and naming systems.

By Margie Wylie
Senior Editor

MOUNTAIN VIEW, Calif. — SunSoft, Inc.'s Solaris last week joined the ranks of operating systems, such as Windows and Mac-OS, that are moving toward a more open architecture by offering back-end APIs that allow third parties to plug in an array of network services.

SunSoft, the subsidiary of Sun Microsystems, Inc. based here, last week announced the Federated Services Interface (FSI) and an improved set of its own net services, Open Network Computing Plus (ONC+).

FSI is an interface that will let users choose different filing, naming and security systems in addition to the ONC+ services that ship with Solaris, a Unix-based operating system. Some of FSI's technology will ship in Solaris 2.0 next month. For example, users will be able to choose between Data Encryption Standard (DES) or Kerberos authentication through FSI technology.

However, FSI will not be generally available until next year, and outside vendors will not be able to adapt other net systems to run under FSI until SunSoft releases an application program interface and developers' kits. Preliminary FSI APIs are expected to be available to developers early next year. SunSoft will base FSI's final APIs on work under way in X/Open Company, Ltd. and Unix International, Inc. committees, said Natalie Shuttleworth, group product marketing manager for distributed computing technology at SunSoft.

So far, three developers have announced they will implement Novell, Inc.'s NetWare, the Open Software Foundation, Inc.'s Distributed Computing Environment (DCE) and Open Systems Interconnection services as modules under the interface. Fellow Sun subsidiary, SunSelect, will port its SunLink NetWare product to run under FSI. Transarc Corp. will provide a DCE module, and SunConnect will offer OSI services.

Until then, Solaris 2.0 users will be able to take advantage of the improved filing, security and naming services of ONC+, which will ship with the operating system next month.

"ONC+ will be the default FSI service that will ship with Solaris, but we want to emphasize that it will have no performance advantage over third-party add-on services," Shuttleworth said.

SunSoft officials will not reveal the price of Solaris 2.0 until it is released next month.

Network File System Plus (NFS+) will offer multithreading and local disk caching, which increase the number of clients that can be supported on an NFS+ server. Future versions of NFS+ will also include performance enhancements and better

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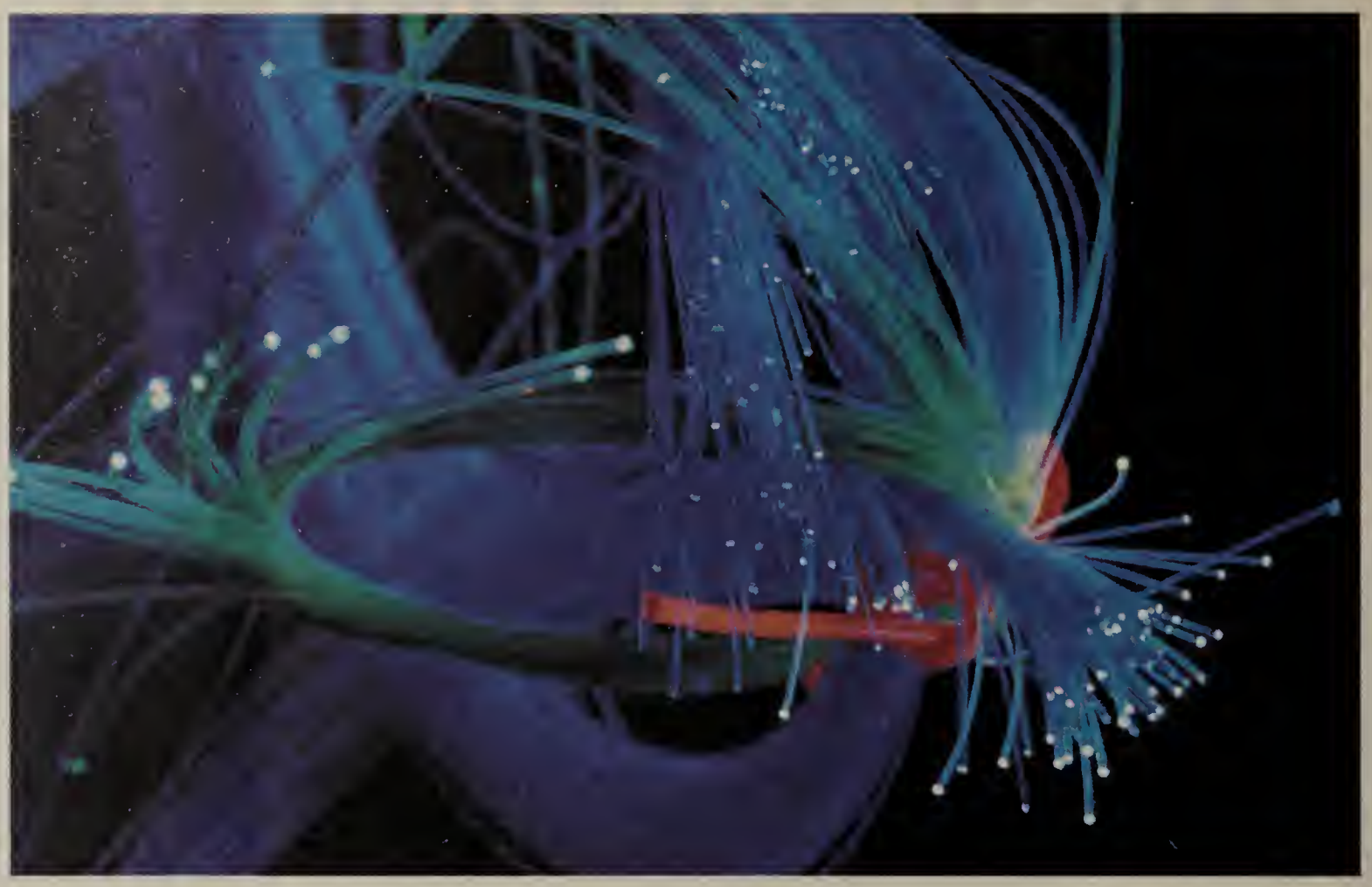

Your Fiber Network is the Backbone of Our Business

For companies large and small, fiber optics is a powerful tool that can be used to make enterprise networks more efficient. To realize the maximum benefits of fiber however, you need to work with a company that has a track record of delivering high-performance fiber networking solutions. That's why if you use, or plan to use fiber anywhere in your enterprise network you need to talk to Fibermux.

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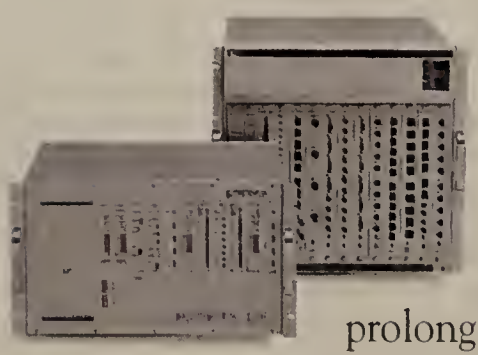
Industry leaders continue to rely on Fibermux solutions because we pioneered the cost-effective utilization of fiber, and we have the products to make fiber work in the most demanding applications where multiple computing resources need to be transparently combined.



With Magnum100 and our Crossbow™ multi-LAN intelligent hub, we have the tools you need to connect and manage all your networks. Fibermux fiber solutions provide the structure that will prolong the life of your cable plant, increase network productivity and allow you to use your existing equipment while accommodating network growth.

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INTERNETWORKS

LAN-TO-LAN AND LAN-TO-WAN EQUIPMENT AND STRATEGIES

Worth Noting

"The likelihood of a totally wireless network environment is about as great as the paperless office."

Dave Fowler
Vice-president of marketing
Chipcom Corp.
Southborough, Mass.

Link Notes

Analytica Communications, Inc. has announced SoftBridge/L5-SRT, a hardware/software combination that transforms an 80X86-based microcomputer into a local token-ring bridge.

The SoftBridge/L5-SRT consists of source routing transparent bridging software, two 802.5 token-ring adapter cards and a bridge configuration and management utility. Similar to a traditional local token-ring bridge, the SoftBridge/L5-SRT improves end-user response times by segmenting large local-area networks into smaller work group rings.

The bridge costs $1,595 and is available now.

Persoft, Inc. has announced that its wireless Intersect Remote Bridges will be packaged as turnkey products with all the hardware and software necessary for immediate installation. Previously, Persoft provided a kit, including software and antennas, that required additional hardware.

The bridge, which comes in token-ring and Ethernet versions, uses wireless technology to connect local-area networks up to three miles apart.

Despite the change in packaging, the bridge's price will remain the same. The Ethernet model is available now and is priced at $6,495, while the token-ring version, which is scheduled for availability

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Fibermux adds 10Base-T minihubs to Crossbow line

Devices could help users link workstations, hubs.

By Skip MacAskill
Staff Writer

CHATSWORTH, Calif. — Fibermux Corp. last week announced new concentrators that promise to simplify connections between workstations and the company's Crossbow intelligent Ethernet hubs.

The Crossbow Extend24 FX681Z and FX682Z are standalone, 24-port 10Base-T intelligent minihubs. The devices obviate the need to string wires from a central hub to individual remote workstations.

The Extend24s can connect to a central Crossbow hub as far as 2,000 meters away via thin- or thick-wire coaxial or fiber-optic cable. This lets users replace 24 unshielded twisted-pair cable connections to remote workstations with a single fiber or cable link.

Both Extend24 models support the Simple Network Management Protocol, so workstations attached to them can be managed from a central location along with other hubs on the net. They also have Management Information Base II-compliant agents that allow the Extend24s to be managed by the company's LightWatch network management system or other SNMP-based systems, such as SunConnect's SunNet Manager and Hewlett-Packard Co.'s OpenView.

The hubs are equipped with 32K bytes of static random-access memory that stores net configuration and Internet Protocol hub addresses. This enables the automatic restoration of configuration information after a power outage.

In addition to each device's 24 10Base-T ports, the FX681Z has one thick-wire port and two Fiber Optic Inter-Repeater Link ports, while the FX682Z has one thin-wire and one thick-wire port.

The FX681Z costs $2,995, or $111 per port, and the FX682Z is priced at $2,495, or $96 per port. Both are available now.

ACC boosts net mgmt. for internets

By Maureen Molloy
Senior Writer

COLUMBIA, Md. — ACC Systems last week announced an SNMP-based network management system for small to midsize internetworks that lets users manage bridges, routers and workstations from multiple vendors.

Management Of Network Activity (MONA) is a Simple Network Management Protocol-based system that runs on Sun Microsystems, Inc., Digital Equipment Corp. and Unix-based personal computers or workstations. It allows users to monitor and analyze network activity via interactive graphics, menus and customized automation routines.

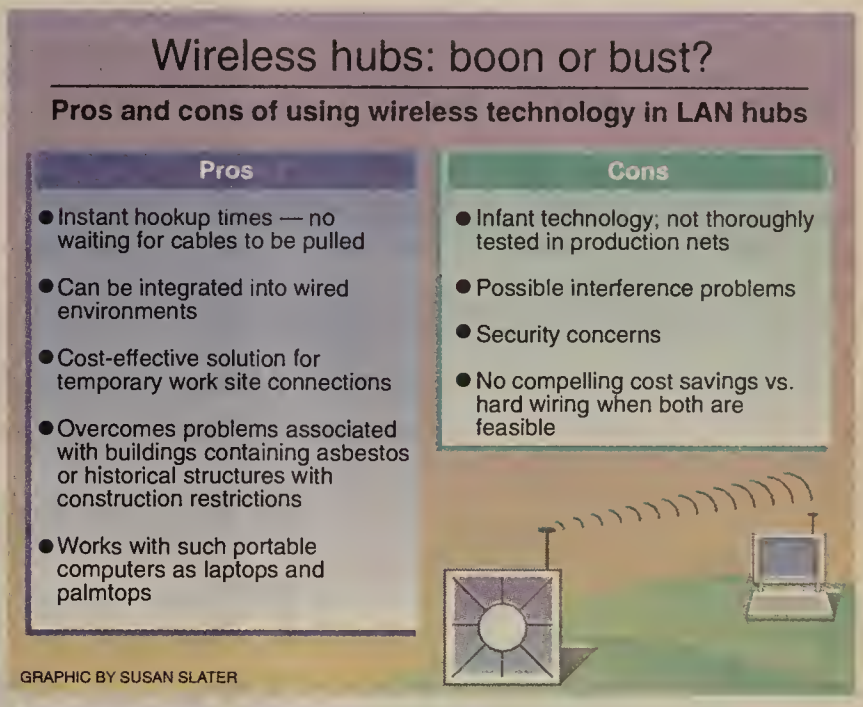
MONA, which supports up to 3,600 nodes, is an enhancement to the company's current PC-based ACS4800 net management system. Among its features is a discovery capability that enables the system to automatically learn where devices are located.

Another feature of MONA is an Open Software Foundation, Inc. Motif-based graphical user interface (GUI) equipped with a hierarchical map display that shows progressively more detailed views of the network. The GUI features pull-down windows such as an On-Line Help Window and a Status Window to show the current state of the network. It also provides a graphical representation of data relative to each supported Management Information Base (MIB), such as details about error conditions and diagnostic information.

MONA supports 33 vendor-specific MIBs, enabling users to garner detailed management information about multivendor equipment.

Charts showing the status of a device can be generated in real time through a cache of information the system keeps on each device, thereby eliminating the need to query each node.

MONA is available this month for $4,950. For more information, contact ACC at (800) 242-0739.



Hub vendors mixed on use of wireless

Proponents cite advantages of instant hookup; others wait for demand, technology to develop.

By Skip MacAskill
Staff Writer

Wireless LANs may be one of hottest emerging areas in the computer industry, but hub makers disagree on whether their equipment should be used to support the nascent technology.

Major players such as Cabletron Systems, Inc. and Ungermann-Bass, Inc. have waded into the wireless pool via reseller agreements with manufacturers of wireless local-area network products. But others, including Optical Data Systems, Inc. (ODS) and SynOptics Communications, Inc., have not embraced the technology, citing its immaturity and a lack of customer demand.

Despite some vendors' misgivings, it appears that wireless technology will continue to garner a lot of attention. During the recent INTEROP 92 Spring, for example, five vendors — BICC Data Networks, Inc., Cabletron, Epilogue Technologies, Inc., Motorola, Inc. and Windata, Inc. — took part in the wireless showcase, and eight other vendors have expressed interest in the fall INTEROP showcase, including Oracle Corp. and Proteon, Inc.

Ungermann-Bass, for one, has signed a deal with Motorola to resell the company's Altair Plus wireless Ethernet LAN, although Ungermann-Bass said it has no immediate plans to incorporate wireless support directly in its Access/One smart hub.

According to Surya Panditi, business unit leader for Access/One, the company views wireless hubs as a niche application that may, for instance, provide short-term connections for temporarily displaced work groups.

Panditi noted that wireless offers little cost benefit. "It's unlikely that switching to wireless in situations where hard wiring is possible would be a cost savings,"

> It appears that wireless technology will continue to garner a lot of attention.
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he said. "Wired solutions are much more cost-effective because they are inherently more secure, less expensive and more manageable. That, however, doesn't apply to all situations."

Wireless, for instance, may be appropriate in areas where wiring is not feasible, such as warehouse floor applications, he said.

Additionally, Ungermann-Bass sees the portable computer industry as an area ripe for wireless connectivity, where laptop users could employ their devices

(continued on page 22)

Hub vendors mixed on use of wireless

continued from page 21

to take notes during a meeting in a conference room, for example, and tie directly into the company network without physical connection.

"A lot of our customers are asking us about wireless in this situation," Panditi said.

Cabletron customers are also seeking ways to avoid wiring problems, such as installation delays, by using wireless. Toward that end, the Rochester, N.H.-based hub maker has sought help from Northborough, Mass.-based Windata, which offers wireless LAN products for Ethernet, token-ring and portable computers.

Besides private-labeling Windata's wireless Ethernet products, the two companies are developing a wireless LAN module for Cabletron's hub line that will forge wireless links to workstations and other devices.

"We had customers asking us for ways to avoid cabling delays, which could last anywhere from one week to several months, for example, in the New York financial district," said Ken Kennedy, product manager for desktop products at Cabletron. "That, coupled with high labor rates, tended to make wired networks very expensive."

Kennedy also cited construction restrictions that make wireless a viable approach, for instance, in older buildings that contain asbestos and historical buildings, where breaking into walls is not permitted. "Wireless lets you bypass those issues and still maintain connections to wired environments," he added.

Kennedy sees this particular advantage as significant. "Being able to integrate wireless devices into wired environments is extremely important," he said. "Since those devices can be managed via SNMP, they appear as just another device on the network. Net managers don't have to worry about treating them differently."

Not all vendors agree on the management issue, however. "The issue is not if wireless and wired technologies can coexist, but if wireless can be managed from a software perspective so that the net looks like one network," said David Fowler, vice-president of marketing for Chipcom Corp.

He noted that Chipcom is monitoring the technology but is struggling with the management issue as well as other issues, including whether it is cost-effective to directly support the technology within the company's hubs.

"It doesn't make sense for us to stick the technology inside the hub now because we couldn't justify the development costs with added value," he explained.

Other hub vendors are currently shying away from wireless technology in their products because of insufficient customer demand and the fact that it is still very young.

"At this point, we have not really considered [wireless] as an option," said Terry Gaston, vice-president of Optical Data Systems, Inc., a hub, bridge and router maker in Richardson, Texas. "I don't think we'll be extending our resources until we see the requests coming from the customers."

Bill Lanfri, SynOptics' vice-president of marketing, noted that his company is likewise hedging on the technology. "This technology is still in its infancy," he said. "As it becomes more mature, we will investigate it further."

John Boyle, director of marketing for 3Com Corp.'s Premises Distribution Division, said his company has no immediate plans to offer wireless LAN support but is closely tracking the technology and hopes to drive the market when some fundamental issues are worked out.

"There's no question we're going to see wireless connectivity deployed on a wide basis because it's such a natural," he said. "Before that happens, however, we need to overcome issues of distance, licensing, bandwidth, cost and security."

Link Notes

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next month, costs $13,990.

For more details, contact Persoft at (608) 273-6000.

CrossComm Corp. will announce today that it has added Novell, Inc.'s Internetwork Packet Exchange (IPX) protocol to its ILAN Universal Router.

The IPX routing function is equipped with load balancing to improve wide-area net utilization by balancing traffic across redundant paths. It further reduces the use of wide-area bandwidth by automatically decreasing unnecessary IPX Service Advertisement messages between routers.

IPX routing is available now as part of ILAN Software Feature Pack FP-R01.

Worth Noting

"If you have to subscribe to a frame relay committed information rate, you're not getting bandwidth on demand."

A network manager at a large financial services firm who requested anonymity

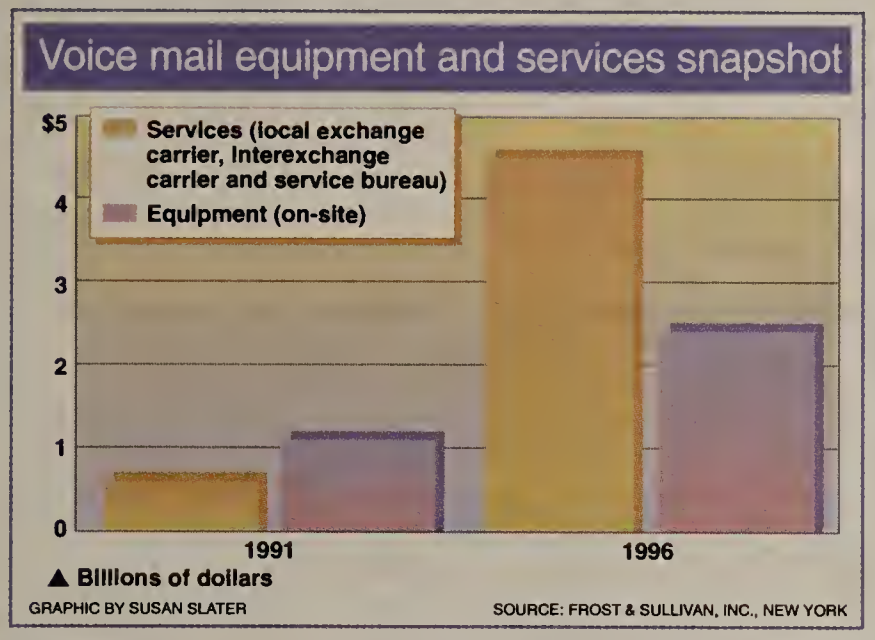
Regulatory Update

Claiming **AT&T**'s contract deals are discriminatory, **MCI Communications Corp.** wrote to the Federal Communications Commission asking it to reject AT&T's most recent offering and reconsider earlier decisions allowing other contract deals. Of the eight contract deals AT&T has filed, six have taken effect.

The current dispute revolves around AT&T's package of Accunet Spectrum of Digital Services, Accunet T-1, Accunet T-3 and local channel services. MCI has protested this deal in part because it contains time limits for ordering. Contract deals are supposed to be generally available to all customers. MCI argues that time limits artificially restrict users' ability to order service.

In a letter to the FCC last week, MCI said, "We believe you will find that the contract-tariff offerings . . . pose a threat to the further development of a healthy, competitive interexchange marketplace."

AT&T said MCI's claims are without merit. "Contract tariff services are used by sophisticated telecommunications customers who have the expertise and resources to make a purchase decision within the specified time frame," AT&T told the FCC. "No customer has complained that it has been denied this service." AT&T cited examples of such restrictions on prior offerings.



Infonet expands reach and capabilities of LAN service

Adds support for key protocols, new countries.

By Bob Wallace
Senior Editor

EL SEGUNDO, Calif. — Infonet Services Corp. last week said it is extending its public router-based network service to 10 new countries and that the offering will support six new protocols.

Infolan, introduced early last year, will be extended into Australia, Denmark, Germany, Ireland, Italy, Japan, Korea, Singapore, Spain and Switzerland. It is currently available in the U.S., Canada and in nine European countries.

Infonet is also expanding the number of data protocols that Infolan supports to include Digital Equipment Corp.'s DECnet Phase IV and Open Systems Interconnection, IBM's Network Basic I/O System, Novell, Inc.'s Internetwork Packet Exchange (IPX), and Apple Computer, Inc.'s AppleTalk Phases 1 and 2.

The Infolan public router-based services already support Transmission Control Protocol/Internet Protocol and Source Route Bridging, according to Jean-Noel Moneton, Infonet's vice-president of communication services.

"With support for additional LAN protocols, Infolan users may now implement cost-effective, high-performance global multi-protocol virtual private data networks," Moneton said. "There's no longer a need to maintain and manage separate, overlapping single-protocol networks with expensive leased lines."

The backbone network supports TCP/IP and OSI protocols. All other protocols are encapsulated or address-translated into TCP/IP or OSI by routers at the user's site.

In instances where Infolan users have multiple local-area networks in the same city or country, Infonet links and manages the internetwork as part of the Infolan service. The company monitors the performance of customers' Infolan nets from the company's existing dedicated net control center in the U.K.

"Managing [users] intra-country data communications is the [first] step of Infonet's plan to manage LAN communications from desktop to desktop," Moneton said.

"There's no longer a need to manage overlapping single-protocol networks."

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Gateways are available between the Infonet X.25 and Infolan networks, allowing IP and X.25 clients to utilize both. An asynchronous-to-Telnet gateway has also been added to allow global public dial access for IP hosts on the Infolan network. Users of that net may also communicate with hosts on Internet using the new Internet gateway.

Vendors back cellular data net technology

Expect cellular's omnipotence, spectrum and customer base to make it powerful competitor.

By Ira Brodsky
Special to Network World

SANTA CLARA, Calif. — An overflow crowd of 1,100 people recently witnessed here what could prove to be the beginning of the modern age of mobile data communications.

At a special briefing, speakers from IBM, McCaw Cellular Communications, Inc., PacTel Cellular, GTE Communications Corp., Pacific Communication Sciences, Inc. and Synacom Technology described a technology that will enable existing cellular telephone networks to support reliable high-speed data communications.

The technology, called Cellular Digital Packet Data (CDPD), is being embraced by eight of the nation's largest cellular telephone carriers, including Ameritech Mobile Communications, Inc., Bell Atlantic Mobile Systems, GTE, McCaw Cellular Communications, Nynex Mobile Communications, PacTel Cellular, Southwestern Bell Mobile Systems and US West Cellular.

Lee Franklin, president of PacTel Cellular's Wireless Data Division, claimed CDPD will succeed over competing packet radio solutions because of cellular's superior geographic coverage, access to much greater spectrum and millions of current telephone users.

CDPD is based on existing technologies and uses a technique called channel hopping to allow data transmission over inactive cellular telephone channels. Vic Moore, a senior engineer at IBM, said the monitoring of even the busiest cellular phone networks revealed considerable unused channel capacity.

CDPD radio channels will support 19.2K bit/sec transmissions, but actual throughput will

(continued on page 24)

Resellers say AT&T is still withholding Tariff 12 deals

By Anita Taff
Washington Bureau Chief

SAN DIEGO — Several hundred resellers meeting here recently said that despite Federal Communications Commission rulings directing AT&T to sell them service under Tariff 12, the carrier is trying to withhold deals.

At a joint meeting of the International Resellers Association (IRA) and the Telecommunications Marketing Association, 14 AT&T resellers said they have been trying for months to purchase Tariff 12 deals without success.

In particular, the resellers are interested in buying Option 58, a deal with extremely competitive rates for inbound and outbound switched services.

Resellers claim AT&T's actions are denying users the chance to purchase services more cheaply from resellers and are damaging competition by shutting out resale operations. They say AT&T is violating provisions of the Communications Act of 1934 that forbid discrimination and various FCC rules that require AT&T to offer its services for resale.

"AT&T has been misleading this group for two years now," Charles Helein, a telecommunications attorney with Arter & Hadden, told members of the IRA. "They will bleed you slowly, and you won't get what you're entitled to under the Communications Act."

Charlie Hunter, telecommunications attorney with Gardner, Carton & Douglas, agreed. He said AT&T is "doing everything it can to keep [Option 58] from being resold."

Late last year, AT&T asked to impose a $1 million fee on new users of Option 58. Earlier this year, the carrier asked the FCC for permission to discontinue

(continued on page 24)

Vendors back cellular data net technology

continued from page 23

be lower since 40% to 45% of the capacity will be consumed in protocol overhead. Because the radio channels will be shared by multiple users, average throughput will vary depending on channel loading.

Unlike today's cellular voice users, mobile data users will not need to know the geographic coverage of individual cellular carriers because the carriers will work together to automatically hand off data sessions as users cross service boundaries.

CDPD will support both connection-oriented and connectionless services. Connection-oriented services will include semipermanent virtual circuits, which will allow users to maintain links to applications throughout the day. CDPD will also support a variety of broadcast services and security features designed to thwart eavesdroppers, prevent fraudulent use and track stolen equipment.

Pricing for CDPD services was not disclosed at the briefing. However, one speaker referenced market research suggesting that subscriber units must be priced under $500 and monthly service charges should be under $50 in order to achieve a 50% market penetration. The time expected for nationwide rollout was not revealed either, but pilot tests are scheduled to take place this summer in San Jose, Calif.

The CDPD architecture possesses three advantages that set it apart from existing mobile data solutions.

First, it is based on cellular technology, the most ubiquitous, reliable and widely accepted mobile communications medium. Second, data users will be able to use small, low-power radios integrated with portable computers. Also, the planned architecture will serve organizations as well as individual consumers, while existing mobile data networks are primarily geared toward major corporations.

The deployment of a nationwide CDPD network is clearly a threat to packet radio networks operated by ARDIS Co. and BellSouth Enterprises, Inc./RAM Mobile Data.

Rob Euler, vice-president of marketing for ARDIS, is confident his company will continue to thrive. "We have the most experience in implementing end-to-end mobile data solutions and are delivering today what everyone else is promising for tomorrow," he said.

"The emerging market for mobile data is large enough to support competing solutions," said Mary Connolly, vice-president of marketing for RAM Mobile Data. "We feel the cellular carriers will help increase customer awareness. But we also know that constructing a bulletproof mobile data network is no easy task."

The most impressive thing about CDPD is that it has won the support of eight major cellular carriers. Until now, cellular carriers have been hesitant about going after the mobile data market because they know little about the business.

CDPD may also score points by being the first mobile data solution to attract a broader community of personal computer hardware and software developers.

Brodsky is president of Datacomm Research Co., a Wilmette, Ill., consultancy.

Resellers say AT&T withholding deals

continued from page 23

sales of the option, a request that was rejected. AT&T denies that its effort to modify or kill Option 58 was related to resellers and all of the other charges.

The carrier said the requested changes are necessary to avoid losing money. New FCC rules that allow customers to get out of Tariff 12 contracts without penalty when 800 numbers become portable would allow Option 58 customers to terminate the deal after the first year. AT&T said the option is designed to generate a profit later in the contract cycle and it would lose money if customers abandoned the option early.

Resentment from resellers toward AT&T has been rising for some time, but the situation began to boil over earlier this year when it looked as if they might be shut out of the Tariff 12 arena. In April, the FCC said customers who had not already signed up for Tariff 12 would have to abandon their current 800 numbers if they wanted to buy into Tariff 12 deals.

The 14 resellers said they had been trying to purchase service well before the cutoff date and that if AT&T had not stalled on selling them service, they would have fallen under rules allowing them to sell existing 800 numbers.

Madeline Cuchera, senior advisor to FCC Commissioner Andrew Barrett, told the IRA conference that FCC officials intended for resellers to be able to carry traffic from existing 800 customers without forcing them to change.

WHY IS NATIONAL'S INDUSTRY-STANDARD SILICON USED IN 80% OF ALL ETHERNET CONNECTIONS?

WHY IS IBM TEAMING UP WITH NATIONAL TO OFFER TOKEN-RING AND OTHER LAN INNOVATIONS?

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Worth Noting

"The term 'work flow' is often confused with the limited idea of automatic routing of documents. It's actually the automation and management, including tracking, of all the work in an organization."

Fritz Dressler
Director of marketing
Action Technologies, Inc.
Alameda, Calif.

Store & Forward

XDB Systems, Inc. has unveiled a new version of its XDB-SQL/Windows database manager that supports Microsoft Corp. Windows applications written in C or Visual Basic. The applications can be used on a stand-alone personal computer running XDB-SQL/Windows or client workstation accessing an XDB-Server on a local-area network.

The core of the XDB-SQL/Windows product is the company's SQL Engine, which is compatible with IBM's DB2 Version 2.2

Version 2.41 runs on a Windows-based PC and is priced at $995.

Information Builders, Inc. has announced that its Focus database software and its Enterprise Data Access/SQL family of client/server data access software will now run on Hewlett-Packard Co.'s Corporate Business Servers.

These new HP servers are based on the company's next-generation Precision Architecture Reduced Instruction Set Computing technology.

Pricing varies by system configuration.

X.400 gateway opens doors for Oracle*Mail customers

Retix, Oracle collaborate to offer new gateway.

By Timothy O'Brien
West Coast Bureau Chief

SANTA MONICA, Calif. — Retix, a supplier of X.400 networking products, and database giant Oracle Corp. last week announced the availability of an X.400 gateway that allows Oracle*Mail users to communicate with users of any other X.400-based electronic mail system.

When run on a Unix-based personal computer operating as a Retix OpenServer 400 messaging server, the new Oracle*Mail X.400 Gateway software will allow Oracle*Mail customers to send messages to users of other X.400 E-mail systems within their enterprise or outside the company.

"We have a lot of government customers and customers in other areas of the world who were really demanding X.400 capability. Through its OSI and messaging technology, Retix provides these Oracle*Mail customers with a proven X.400 solution," said Larry Stevens, vice-president of Oracle's Office Automation Group.

In its first release, the gateway will run on Interactive Unix from Interactive Systems Corp., a recent Sun Microsystems, Inc. acquisition. It requires at least an Intel Corp. 80386-based PC. The next version will support The Santa Cruz Operation, Inc.'s SCO Unix.

Oracle*Mail, which works with more than 40 hardware platforms, runs at the server with the Oracle relational database management system, using the database as its message storage facility.

Both Oracle and Retix will market, sell and support the Oracle*Mail X.400 Gateway, which is available now. Pricing begins at $10 per mailbox, with a minimum of 500 mailboxes.

Software AG, Apple join in interoperability pact

RESTON, Va. — Software AG of North America, Inc. and Apple Computer, Inc. have agreed to work together to give Macintosh users access to Software AG's database and application development software.

While specific product details are expected to be announced later this year, Software AG is working on Macintosh computer versions for a number of its products. They include the desktop version of Natural, Software AG's fourth-generation language technology, scheduled to be available by year end.

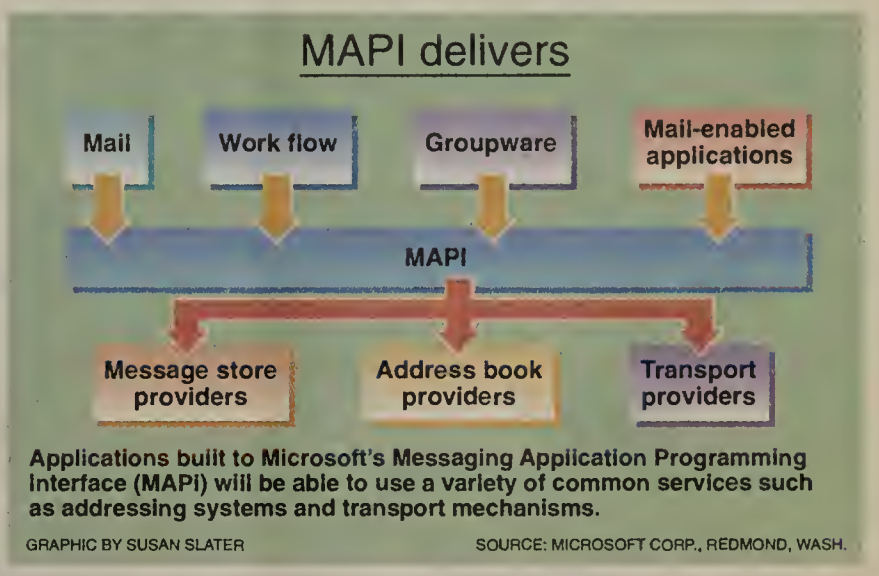
Software AG's goal is to help customers build front-end applications that work in conjunction with host-based applications developed in Natural.

Software AG will handle development work for Macintosh products, while Apple's role in the agreement will be to provide technical assistance and ensure compatibility of the Software AG versions with its Virtually Integrated Technical Architecture Lifecycle architecture and interfaces, Apple's plan for tying Macintoshes into corporate nets.

Weaving the Macintosh into its Entire Client Workstation strategy is an important step for Software AG, which is trying to help customers move away from terminal/host environments to client/server applications that take advantage of graphical user interfaces on personal computers.

"With Apple, we can offer users additional choices for developing desktop applications," said Joseph Agro, Software AG's executive vice-president. "The combination of Software AG and Apple will ease the complexity of enterprise networking and rightsizing with solutions that span the desktop to the mainframe."

Software AG currently offers the Natural Architect Workstation for the Macintosh, a design and analysis tool, with prices starting at $8,000. Also available is the Natural Connection for the Macintosh, which provides IBM 3270 communication from the Macintosh to a host. It is priced starting at $300.



Applications built to Microsoft's Messaging Application Programming Interface (MAPI) will be able to use a variety of common services such as addressing systems and transport mechanisms.

GRAPHIC BY SUSAN SLATER SOURCE: MICROSOFT CORP., REDMOND, WASH.

Vendors give MAPI stamp of approval

Microsoft wins backing of DEC, HP, Novell and others for proposed open messaging interface.

By Timothy O'Brien
West Coast Bureau Chief

REDMOND, Wash. — Microsoft Corp.'s efforts to line up backing for it's Messaging Application Programming Interface (MAPI) have proved successful of late, with heavyweights such as Banyan Systems, Inc., Digital Equipment Corp., Hewlett-Packard Co. and Novell, Inc. pledging support.

MAPI is a set of messaging function calls that developers can use to support mail-enabled applications. It is competing against other proposed messaging interface standards, including one from a consortium led by Lotus Development Corp.

Backing from such key companies as DEC, Novell and HP is important to the success of MAPI, which recently won support from CompuServe, Inc., Prometheus Products, Inc., SkyTel Corp. and Soft-Switch, Inc.

Analysts say MAPI's close ties with the popular Microsoft Windows make it a "must support" for most vendors and warned that comparisons of MAPI with other proposed messaging interfaces may not be accurate.

"This announcement is good," said Jamie Lewis, vice-president of The Burton Group, a consulting firm in Salt Lake City.

"Politically, all vendors will need to support MAPI since it will be the standard messaging interface for Windows at the client level," he added. "But it's wrong to compare MAPI to other proposed standards like the one from Lotus, which is server-based and doesn't really compete."

MAPI is the messaging part of the Windows Open Services Architecture, Microsoft's plan for giving Windows' applications access to a variety of applications, databases and services in an enterprise network.

MAPI provides applications with a common way to access underlying messaging systems or back-end services such as message store facilities (see graphic, this page). MAPI utilizes custom drivers, called service provider interfaces, which providers of mail engines or other messaging services can support.

DEC said it will use MAPI to give Windows users access to its All-In-1, while HP is supporting MAPI to enable its OpenMail messaging services to support mail-enabled applications and electronic mail systems.

Novell said it will support MAPI as well as the Vendor Independent Messaging (VIM) interface promoted by Lotus and others. Novell will also continue to promote its own Message Handling Service (MHS) interface.

"Novell's support for MAPI as well as the other messaging application programming interfaces gives developers freedom in choosing how to build their products," said Carey Heckman, director of product marketing, messaging at Novell.

CompuServe will build a MAPI service provider interface in order to make its worldwide electronic messaging system available to a greater number of personal computer users.

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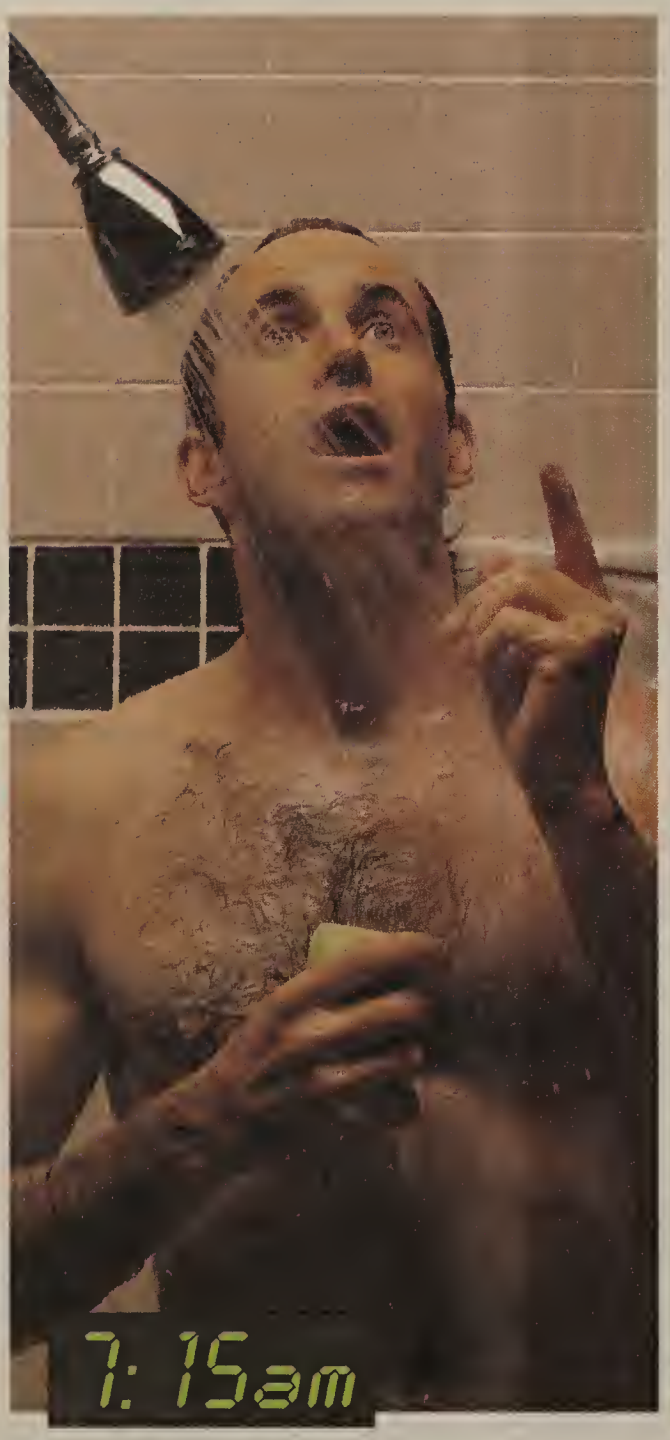
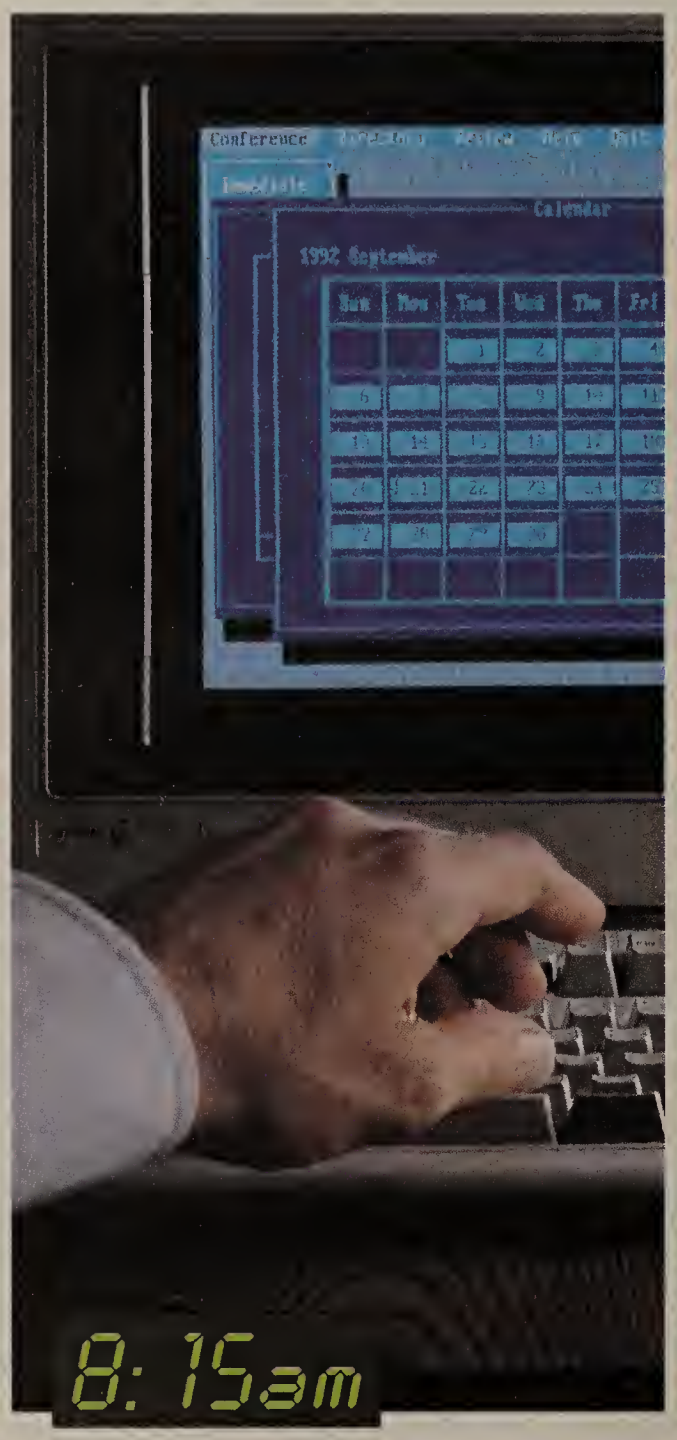


You have a great idea.



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INDUSTRY UPDATE

VENDOR STRATEGIES, MARKET TRENDS, ALLIANCES AND FINANCIALS

Worth Noting

"Expect AT&T and MCI to be on guard for Sprint to be going after their customers in Centel [Corp.] territories."

Steve Sazegari
Telecommunications analyst
Dataquest, Inc.
San Jose, Calif.

People & Positions

Texas billionaire **Ross Perot** has announced his resignation as chairman and chief executive officer from **Perot Systems Corp.**, the Herndon, Va., outsourcing firm started by Perot following his sale of Electronic Data Systems, Inc. (EDS) to General Motors Corp.

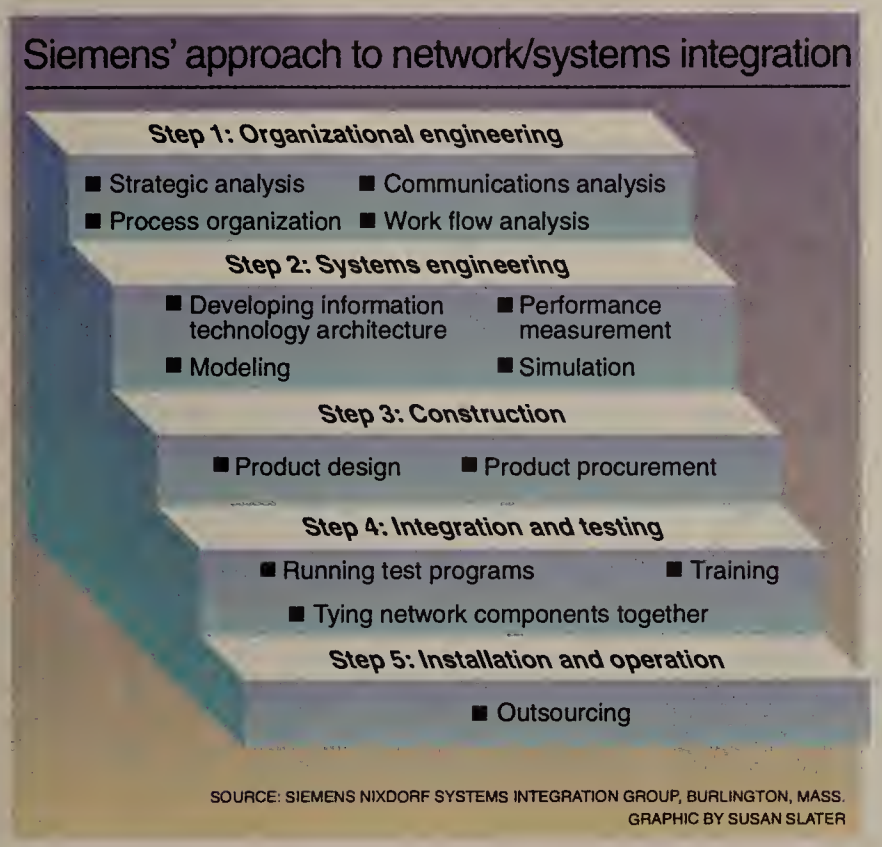
Perot, who will remain as a member of the company's board of directors, will be replaced by **Morton Meyerson,** a former president and vice-chairman of EDS. According to published reports, Perot said his departure from Perot Systems is not related to his role in the presidential race.

Joseph Graziano, executive vice-president and chief financial officer at **Apple Computer, Inc.,** has been elected to serve on the board of directors at **StrataCom, Inc.,** a San Jose, Calif., maker of fast packet and frame relay switches.

Graziano's experience includes positions at Sun Microsystems, Inc. and Intel Corp., among others.

Gary Rowe has been named a principal at **Rapport Communication,** a Washington, D.C. consulting firm that specializes in electronic messaging.

Previously, Rowe was core services director with AT&T EasyLink Services.



SOURCE: SIEMENS NIXDORF SYSTEMS INTEGRATION GROUP, BURLINGTON, MASS.
GRAPHIC BY SUSAN SLATER

Siemens Nixdorf sets up new integration business

Start-up to operate on 5-step service approach.

By Bob Brown
Senior Editor

BURLINGTON, Mass. — Siemens Nixdorf Information Systems, Inc. last week announced plans to enter the North American systems integration market by creating a new business unit specializing in network integration.

The newly created Siemens Nixdorf Systems Integration Group, based here, will leverage the technical resources of computer company Siemens Nixdorf Information Systems and its $45.6 billion parent company, Siemens AG of Germany. The new unit also will partner with third parties to meet user needs.

"We'll have access to Siemens' engineering and research and development resources, but our business plan is that of a start-up," said Heinz Kagerer, a vice-president of Siemens Nixdorf Information Systems and head of the new group. "We'll look to partner with other companies, and we might build networks and systems that don't involve [any] Siemens products. We'll be a full-fledged systems integrator."

The new group is being funded by the Siemens Nixdorf AP Division, a 3,000-person global systems integration organization, and will complement this group's efforts by focusing on the North American market. Initially, the 10-employee integration group will serve mostly as a subcontractor on systems integration projects under more established systems integration firms.

Service options

The group will take a five-step approach to providing network and systems integration services, giving users the option of having Siemens perform some or all of the following services: organizational engineering, network and systems engineering, network and systems construction, integration and testing, and outsourcing (see graphic, this page).

According Kagerer, the company will likely collect 30% of its revenue from consulting on network needs and designing net or system blueprints. The unit will rely heavily on software and equipment vendors to do the actual building and integration of the networks or computer systems.

The group has some handshake agreements in place with other vendors, Kagerer said, but has not announced any formal partnerships.

Starting at home

The Siemens Nixdorf Systems Integration Group is getting its feet wet in the U.S. market by providing its services to Siemens' existing U.S. companies, of which there are about 30.

(continued on page 28)

CA90s architecture lives up to promises

Two-year-old Computer Associates plan focuses company efforts, helps users integrate platforms.

By Network World Staff

ISLANDIA, N.Y. — Computer Associates International, Inc.'s (CA) 2-year-old Computing Architecture for the 90s (CA90s) product expansion and integration effort is keeping the company focused and winning praise from users.

Since unveiling the architecture in April 1990, the $1.5 billion software company has made significant progress in porting its flagship offerings to different hardware platforms and enabling cross-product compatibility.

CA90s defines a set of application program interfaces the company is building into its three major lines — database management, systems management and applications — to enable users to link programs running on multiple platforms. These platforms include IBM mainframes, minicomputers and personal computers, as well as Digital Equipment Corp. VAXes and Unix computers.

The company, based here, built much of its product line via acquisition and, thus, has a collection of sometimes incompatible software products. In fact, the company is in the midst of buying another software vendor, Nantucket Corp.

"CA90s has been a key factor in allowing us to develop a complete set of products in a short time," said Anders Vinberg, senior vice-president of research and development at CA.

Not only has the strategy helped the company migrate existing products to new platforms, it has also served as a blueprint to prepare CA for emerging platform technologies such as Microsoft Corp.'s Windows.

Users, most of whom took a wait-and-see view of CA90s when it was introduced, said CA has largely followed the architecture's guidelines.

"CA has made significant progress in every one of its product areas," said George Emmanuel, chairman of the Information Users Association, a CA database management system user group.

(continued on page 28)

INDUSTRY BRIEFS

Novell continues to roll. Novell, Inc. of Provo, Utah, posted big gains in revenue and earnings for its second fiscal quarter ended May 2. The NetWare local-area network software vendor reported revenue of $225 million for the second quarter, up 50% from $150.2 million for the second quarter last year. Novell earned $61.3 million in the second quarter, a jump of 60% over $38.4 million earned in the second quarter last year.

Cayman, Silicon Graphics ink distribution pact. Cambridge, Mass.-based Cayman Systems, Inc. has signed a distribution agreement with Silicon Graphics, Inc. under which the Mountain View, Calif., workstation maker will distribute Cayman's Apple Computer, Inc. Macintosh internetworking products. Under the agreement, Silicon Graphics will distribute Cayman's GatorBox CS, an AppleTalk-to-Ethernet gateway, and GatorStar GX, a LocalTalk-to-Ethernet router.

Ungermann-Bass boosts Far East presence. Ungermann-Bass, Inc., a Santa Clara, Calif., maker of hubs and other networking gear, has joined forces with Singapore-based CEI Systems & Engineering to form a joint venture company designed to sell networking products and provide systems integration services in Asia.

CA90s architecture lives up to promises

continued from page 27

Richard Roskelley, director of financial computer support at Brigham Young University in Provo, Utah, and a user of CA's CA-Datacom database software, agreed. "They're really adding value to all of those products they've been buying by building software hooks that let the new products work with other CA products," he said.

Even those industry observers who put little stock in product architectures said CA is sticking to CA90s.

"CA90s has probably done more to help Computer Associates focus internally on what it needs to do to meet the rapidly evolving marketplace than it has done directly for customers," said Peter Kastner, a vice-president at Aberdeen Group, Inc., a consulting firm in Boston.

"What IBM has not been able to accomplish with [Systems Application Architecture], Computer Associates has been able to accomplish — and much more," said Shaku Atre, president of Atre, Inc., a Rye, N.Y., software consulting firm.

Making progress

One area where CA has made progress is with its systems security software, CA-Top Secret and CA-ACF2. Originally, these products only managed systems security for mainframes. But as part of CA90s, CA released new versions of the software for DEC VAXes and PCs, Vinberg said.

The software enables administrators working on mainframes to manage passwords and access privileges for users on network-attached VAXes and PCs, he said. By the end of the second quarter, the company plans to release new versions of its systems security products for Unix computers, he added.

Another area where it is making strides with CA90s is with its flagship DBMSs, CA-Datacom and CA-IDMS, said Yogesh Gupta, vice-president of R&D and a specialist in CA's database product lines.

Initially, CA-Datacom and CA-IDMS were only mainframe DBMSs, Gupta said. As part of CA90s, the company has begun supporting the DBMSs on PCs. Later his year, the vendor plans to begin supporting CA-IDMS on DEC VAXes.

Some controversy

Certain portions of CA90s are drawing criticism, such as CA's decision to extend the life of its flagship DBMSs by enabling them to support applications designed to work with other vendors' DBMSs. The firm might be better off revamping the database software instead, analysts said.

For example, the company has engineered CA-Datacom and CA-IDMS to support applications designed to access data from DEC's Record Management System DBMS. CA also has engineered CA-Datacom and CA-IDMS to support the SQL standard for reading and writing data from relational DBMSs.

"I think only a very small number of people are interested in [these products]," said Tony Percy, vice-president for software management strategies at Gartner Group, Inc., a Stamford, Conn., market research firm.

The problem is that CA-Datacom and CA-IDMS are hierarchical DBMSs based on 1970s technology. While existing CA-Datacom and CA-IDMS users might want to use their DBMSs to support various applications, other users would not be interested in the capability, Percy said.

"I just don't think they are going to be able to sell many new accounts," he said. "People would rather use true relational DBMSs from vendors like Ingres [Corp.] and Oracle [Corp.] than wed themselves to CA."

But Percy conceded that CA had made great strides in engineering its DBMS to support other DBMS applications. Even if demand is minimal, CA's technology is sound, he said.

Siemens Nixdorf sets up integration unit

continued from page 27

From there, the new venture hopes to win business from at least a few other firms this year.

Among the major projects the new group is already involved with is the design of a net to link Siemens' U.S. companies to one another, said Gerard Kiley, director of business development at the firm.

Oliver Pflug, a consultant at G2 Research, Inc., a Mountain View, Calif., market research firm, estimates this year's systems integration market at $16 billion.

While other large computer systems vendors such as Digital Equipment Corp. and IBM have formed systems integration groups, Pflug said the Siemens Nixdorf Systems Integration Group could stand out because of its emphasis on networking.

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Marshall Rose
Principal
Dover Beach Consulting
Mountain View, Calif.

Manager Minutes

The **Wall Street Telecommunications Association (WSTA)** will sponsor a half-day seminar on June 16 that will focus on disaster protection and recovery methods for brokerage houses. The seminar will run from 8:30 a.m. to noon and will be held at New York Telephone Co.'s 140 West Street offices in New York.

The featured speakers will be Joseph Povolny, sales manager for Nynex Corp.; Phillip Kull, associate director of advanced customer networks for New York Telephone; and Frank Denniston, general manager of technical support in New York Telephone's network services department.

The seminar is free to WSTA members and costs $100 for nonmembers. For more information or to register, call (908) 204-0863.

Senior information systems managers and corporate executives are invited to attend an executive symposium that will be held during **ComNet San Francisco '92** July 20-23.

The program will explore the business of networking. It will feature sessions on reengineering the office using in-

(continued on page 37)

People management skills vital to downsizing effort

Firms must help IS staffers adjust to change.

By Wayne Eckerson
Senior Editor

The most challenging aspect of downsizing to distributed computing environments is not implementing technology but managing change and its impact on information systems (IS) staffers, according to industry observers.

Most companies that downsize from mainframes to LANs or distributed Unix processors lose between 10% and 30% of their programming staffs, depending on how rapidly the migration is carried out and the complexity of the new development environment.

"[Downsizing] is difficult for systems professionals emotionally and in terms of their skills," said Richard Bretagne, chief information officer at Northwestern Memorial Hospital in Chicago. "People who have invested their whole careers developing a certain skill set all of a sudden are faced with the prospect of having to start over again."

Bretagne and others interviewed by *Network World* said that to minimize attrition, managers must provide substantial training to ease their staff's transition to the new development environment. They also said it is critical to continually communicate to staffers the direction the organization is headed, the goals of the group, and the skills and attitude that will be required to succeed in the long term.

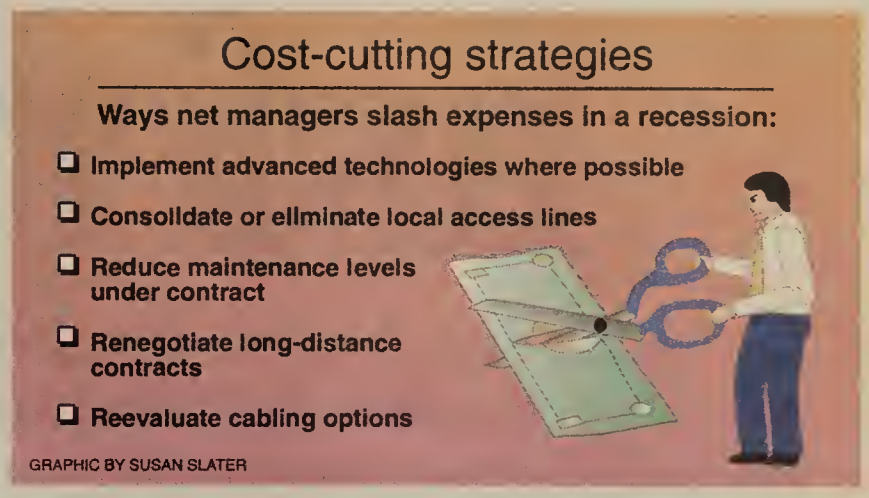
"People dislike change by nature, but we have made change a way of life, so it becomes less threatening," said William Connor, director of IS technology at Motorola, Inc.'s General Systems Sector. He is directing a move away from centralized host computing to distributed processing based on Unix.

"We try to convince our people that true job security comes from being able to adapt rapidly to new technologies," he said.

Whatever their long-term systems direction, companies need to provide substantial training to staffers if they are going to acquire the necessary technical skills and help the company migrate to a distributed computing platform, managers said.

Northwestern Memorial provides programmers 10 days of training a year using a mix of in-house and external training programs. Burlington Coat Factory Warehouse Corp. relies exclusively on informal training conducted by peers who have gained skills either before coming to the

(continued on page 37)



Net managers trim costs, keep workers

Users find creative ways to bring communications costs down, boost service as net usage climbs.

By Wayne Eckerson
Senior Editor

As corporations look for new ways to slim down, net managers are faced with the task of reducing costs while improving service levels.

That's not an easy task even in the best of times, and it can be especially trying during a recession, when communications usage typically climbs as travel is curtailed.

To reduce costs in the face of mounting usage, network managers are doing everything from evaluating new technologies, such as frame relay and wireless communications, to consolidating long-distance traffic across multiple divisions and negotiating harder bargains with long-distance carriers.

Surprisingly, few net managers interviewed by *Network World* mentioned cutting staff as a way to reduce costs. In addition, despite the talk of partnering with a single vendor, most managers said they plan to employ multiple carriers to get the best prices and ensure diverse routing.

John Crankshaw, telecommunications manager at Steelcase, Inc., installed fractional T-1 circuits in his company's IBM Sys-

(continued on page 37)

MANAGEMENT INSIGHTS

BY ERIC SCHMALL

Hunting for a qualified headhunter

"I've got just the right individual for you," the professional headhunter assured me. "He has a wide background in voice and has considerable experience in data programming."

When I finally interviewed this candidate, I found that his background in voice meant that he knew how to use the telephone and his data experience wasn't much better. When I complained to our search expert, he acted shocked. "But his resume read so well," he replied.

The whole point of engaging a headhunter is to save yourself time and energy. The headhunter should search the available field and refer just a few qualified candidates. Unfortunately, many headhunters' referrals fall short of our expectations. Why can't these personnel professionals do a better job?

Part of the reason stems from their obvious unfamiliarity with the network industry. The rapid growth of so many new network technologies makes it difficult for headhunters to stay current with the profession. But to do a good job, headhunters have to stay at least reasonably conversant with the latest network technologies and the skills required to employ those technologies.

Second, many headhunters equate quantity with quality. They believe that if they are flooding your fax with resumes and forwarding candidate after candidate to you, it demonstrates how hard they're working. In reality, just the opposite is true. If they're really doing their job, they should be screening the legions of potential candidates and sending just a handful for your review.

Network managers need to insist that headhunting firms have some expertise in network technology as well as a track record of successful placements in the industry. They should also set some specific ground rules on the quality of the candidates the search firm refers. Net managers should make it clear that they will not rehire headhunters who refer inappropriate candidates.

On flip side of the coin, net

(continued on page 37)

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Bob Kantor
Ciba-Geigy Corporation

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DIGITAL. THE OPEN ADVANTAGE.

Net managers trim costs, keep workers

continued from page 33

tems Network Architecture backbone last year, doubling overall bandwidth while reducing costs by 20%.

He is also planning to replace Steelcase's private branch exchanges with new advanced switches that enable end users to program their own moves, adds and changes, reducing labor costs.

Crankshaw is looking to integrate automatic call distributors, voice response units and automatic number identification technologies to route calls between the company's customer service centers. He said the technologies will help the company handle more customer calls with fewer service agents, saving money.

John Rees, vice-president of telecommunications at First National Bank of Maryland in Baltimore, said he is investigating wireless PBXs as a way to reduce the labor costs of moves, adds and changes.

While wireless PBXs are still expensive, Rees said they may pay off in some of the bank's larger offices where employees are constantly changing stations.

Eye on services

In addition to deploying new technologies, net managers are also watching for new services that could yield savings.

The First National Bank of Maryland, for example, has eliminated many local access charges by stringing fiber directly to AT&T's point of presence through the carrier's new Customer Provided Access service. The service not only cuts local access charges for AT&T long-distance service, but also reduces the price the bank pays for certain AT&T Software-Defined Network features.

The bank also reduces costs by making it a point to connect to carrier nets only via digital T-1 links and using alternative carriers, such as Metropolitan Fiber Systems, Inc., which offer lower prices and more flexible service.

While net managers are looking at new technologies and services, many are reexamining their current equipment and services to see what cost savings can be squeezed out. Dick Kuehn, president of RAK Associates in Cleveland, said many companies can begin cutting costs by reviewing traffic reports and eliminating surplus local access lines.

"Many companies don't realize it, but they have almost double the number of local access lines they need," he said.

Kuehn also said companies should reduce the service levels on their maintenance contracts. For example, companies may want to drop 24-hour coverage to an eight-hour plan or let in-house staff provide first-level maintenance on cable, phones and station line cards. While time and materials charges may increase this way, overall maintenance costs may drop.

In addition, Kuehn recommended that net managers only implement unshielded twisted pair in all new wiring installations because it is cheaper than coaxial cable and can support both voice and data.

Finally, net managers must get tough when negotiating with vendors. "The business climate today requires net managers to sharpen their negotiating skills. Part of [being a good negotiator] is just standing up to carriers until you get what you want," Kuehn said.

Negotiating savings

Philip Evans, former telecommunications manager at FMC Corp. in Dallas and now a consultant with Perot Systems Corp., said one way to cut costs is to negotiate better contracts by taking advantage of changes in tariffs, extending the length of an existing contract or letting multiple carriers bid on a contract.

Another thing net managers can do is aggregate traffic across the company and put it up to bid among multiple carriers, Kuehn said. Managers should also be willing to reject carriers' bids and ask them to do better, especially if those bids come in at tariffed rates.

For example, one of Kuehn's clients put 2.5 million minutes of traffic up to bid to multiple vendors and all responded with tariffed rates. When the client asked them all to rebid for the contract, one of the contenders responded with a short-term deal at lower rates.

"While there are risks in getting tough with vendors, you'll never get any real savings if you don't [push them]," Kuehn said.

Hunting for a qualified headhunter

continued from page 33

managers need to clearly explain to headhunters their expectations for candidates. Net managers need to provide up-to-date job descriptions, an explanation of organizational structures, their management styles and the network group's culture.

Net managers should go into depth as to why there is a job open and the career path likely for the person hired. Each time an applicant is found to be unsatisfactory, the manager should provide the search group with precise feedback to help narrow its focus and readjust its sights.

By establishing clear rules about one another's roles, the network manager and the search firm can work quickly toward finding recognizable, realistic matches.

Schmall is a network systems manager for an insurance holding company.

People mgmt. skills vital to downsizing

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firm or from previous projects.

Percy Young, manager of store systems at Burlington Coat Factory, said the firm pairs junior and senior programmers and has them review each other's code. This pairing serves two purposes: it helps catch code errors and enables programmers to learn new techniques and skills from each other.

While it can be a long road for programmers to learn new technologies and development skills, sometimes it is more difficult for them to overcome fears about the future when their firm migrates to client/server computing. Employees wonder whether there will be a place for them in the redesigned organization and whether they will retain their status and responsibility level.

In order to deal with the net staff's real or imagined fears, managers need to discuss openly and honestly everything about the migration that is likely to affect these people's professional and personal lives. "You have to communicate like hell," Bretagne said.

Tom Gmitter, director of information services at the Rogers Group, Inc., a heavy construction company in Nashville, took his staff off-site to discuss potential obstacles to the firm's downsizing project and possible solutions. During the discussions, the fears many staffers had about the downsizing project surfaced and were addressed, he said.

"Our downsizing project would not have been as successful if we had not held team-building exercises," Gmitter said.

Several managers also say firms should modify compensation programs in order to reinforce work habits and techniques that further the migration effort.

Kash n' Karry Food Stores is examining a compensation program that pays programmers for the amount of code they reuse, instead of the amount they write. Motorola's Connor said compensation helps staffers hurdle one of the toughest aspects of downsizing — to look and think about systems in a new way.

"We need to teach systems operators to think and innovate, in essence, to be more like systems administrators, not systems operators," he said.

Systems operators, according to Connor, succeed in their jobs by following specific rules and guidelines, while systems administrators must be able think on their feet and resolve problems using whatever technique or tool is available.

Manager Minutes

continued from page 33

formation technology, positioning a company to succeed in the global marketplace and finding the right partner for a strategic merger.

The program costs $895, which includes three days at the conference and exhibits, or $495, which includes three days of exhibits. For more information, call (800) 225-4698.

CHI/COR Information Management, Inc. will host its 3rd Annual Communications Resource Management System User Group Conference Sept. 14-16 in Chicago.

The company's Communications Resource Management System (CRMS) is personal computer software that manages network capacity and circuits, network equipment inventory, trouble tickets, directories and service orders. CHI/COR products are used by over 1,500 organizations in 50 countries.

The conference will explore the role of facilities management in disaster recovery.

For more information or to register, call Heidi Ewell of CHI/COR at (312) 322-0150.

STANDARDS

BY RUSSELL SHARER

MAP's impact on networking should not be overlooked

Hundreds of millions of dollars have been spent to develop the Manufacturing Automation Protocol (MAP). Yet less than a decade after initial development efforts began, many are declaring MAP a total waste of time, effort and money.

Despite all the negative reviews it's been getting of late, MAP should be remembered as having made a few lasting contributions to networking. MAP was one of the first protocols to address the issue of interoperability. It also helped define today's standard application program interfaces (API) and gave third-party integrators a greater role in the network design process.

In the early 1980s, most users' communications problems were simple. They were not worried about complete seven-layer multivendor interoperability; they simply wanted to hook equipment together. But General Motors Corp. undertook the MAP endeavor to solve the multivendor interoperability problem because it needed every press, punch, controller and robot on its factory floor to communicate with every other. But each used a different proprietary communications interface.

> MAP technology is a tool for integrators, not a technology for the masses.
>
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Seeking to serve its customers better, GM knew it must find a better way to reprogram the factory floor. If GM could automate changes in options, such as the color of the vehicle, factories would be able to produce more cars per hour and customers would not have to wait as long for the cars they had ordered. Because the cost of a minute of factory-line downtime was more than $100,000, speed in reprogramming was important. GM could develop and dictate a GM standard, but that approach would be expensive and require the cooperation of many vendors. GM saw the standards-setting process as a way of achieving its goal while gaining broad vendor support and minimizing its own up-front costs.

Second, MAP helped define today's APIs by selecting as part of its profile a protocol known as ISO 8649 Association Control Service Elements (ACSE). ACSE provided a common set of software services to application developers — what we today call an API. ACSE enabled GM to more easily develop multivendor application software and improved GM's ability to mix multiple vendors' equipment.

Finally, because factory software had to be built from the ground up and required special knowledge of the application, MAP users realized that support for multivendor communications issues could best be resolved by a third party — an integrator. The result was that MAP technology is now a tool for integrators, not a technology for the masses.

The concepts of interoperability, APIs and integration are now common among standards-based LAN users. Today's network managers benefit greatly from what MAP envisioned and strove for, despite the hard time industry pundits are giving the standard. The founders of MAP deserve credit for making these concepts part of today's networking landscape.

Sharer is a principal at imageMakers, a Santa Barbara, Calif., firm that provides marketing consulting services to technology vendors.

EDITORIAL

Network standards start with users, not vendors

The standards landscape is undergoing a face-lift for the benefit, as well as the detriment, of network managers.

Despite churning out 150 million pages relating to different standards between 1985 and 1988, the Consultative Committee on International Telephony and Telegraphy must produce more standards and do so even faster.

So concludes Theodore Irmer, director of the CCITT. Irmer told attendees at the recent International Communications Association's 45th Annual Conference and Exposition that the CCITT and other standards groups must accelerate standards development to keep pace with the emergence of new technologies that is creating a multiplicity of networks.

The accelerated standards-setting process would step up availability of products to end users and go a long way toward ensuring global interoperability of products and the networks in which they reside.

As a result, the CCITT is shaking up its standards-setting process to roll out standards from beginning to end in just 18 months, as opposed to the four years currently required, Irmer said. Surely, this is good news for network personnel.

But Irmer also painted a disturbing picture of the standards-setting realm. The trend, he said, is toward the privatization of standards, meaning service providers and equipment manufacturers are gaining greater latitude to set standards on their own in vendor groups such as the Frame Relay Forum.

Network managers should lobby to force vendor-driven groups to open up their ranks so users can participate and have an equal voice in setting standards. And where possible, users should champion their own standards.

Standards development today is a competitive business in which vendors and service providers jostle to promote their own proposals.

Irmer is correct in saying that users can benefit from a streamlined standards-setting process, but this gain should not come at the expense of allowing vendor groups to define standards by themselves.

E-MAIL

BY DON DIETRICH

Savvy net managers can benefit from E-mail use

Electronic mail can put the information needed to respond quickly to network problems right at the fingertips of net managers and their staffs. Too often, problem response is delayed until several possible solutions can be evaluated and the one most likely to succeed has been selected — a long process that requires acquiring and evaluating large amounts of new information.

That's where E-mail can come in handy. Using E-mail as a tool to access information in the minds of technical wizards who prefer to be reached via their favorite medium, the computer, increases the likelihood that a network problem will be resolved the first time.

Problems are more effectively solved by investigation than by invention. Rarely is someone faced with a truly new problem, especially in network support.

More often than not, someone else has already tackled your problem, or a similar one. Why spend valuable time calling vendors, reading background material and becoming an expert on the technology and products when the best solution already exists, probably within your own company?

What's needed is an effective way to access an "experience database" — that is, a directory of the knowledge of those who work in your organization. Also, you need a method to scan this database for information that will guide you down the path to a solution without tripping over the rocks that others have already stumbled on.

In addition, the solution you seek must fit your environment. A solution that doesn't fit your computing architecture may be elegant but useless. How do you find out who has come up against a problem like the one that just landed on your desk? How did they solve it? How successful were they, and will their solution work for you?

E-mail is well suited to this investigatory task. Using distribution lists, you can broadcast the same E-mail message to an entire group of people. Organizations should make use of this facility to allow access to groups of experts in various fields.

Even if you decide that someone else's solution doesn't fit your needs, chances are you'll shorten your learning curve with a few phone calls and be better prepared to find a solution on your own.

> E-mail is an ideal tool to help you maintain an enterprisewide experience database.
>
> ▲▲▲

As an alternative to distribution lists, most E-mail systems offer some form of bulletin board. Separate boards can be set up for each topic, or a single board can be subdivided into topics of specific interest.

Messages are posted, and the responses can be read in the sequence in which they were posted, allowing the query and its responses to resemble a written proposal that has been routed for comments. Bulletin boards have been popular "experience databases" in the public sector for many years. They are easy to set up, administer and use.

While groupware products such as Lotus Development Corp.'s Notes are more fully functioned and expensive versions of bulletin boards, they are not always the answer for every organization because of the high economic investment required.

With Lotus's cc:mail, for example, the bulletin board function is free. Once users experience the benefits of bulletin boards, companies may be able to justify moving to a more expensive product such as Notes.

The benefits of all this electronic brain-picking are many. When evaluating new technologies, coworkers will be much more candid about products than suppliers or consultants will be. There's a better chance that the solution will fit your computing architecture if it comes from within your company rather than the marketplace.

If the solution involves purchasing products or services, the administrative details — such as signing a consulting contract or issuing a purchase order — are much easier the second time around.

Finding and applying new technologies to business problems are what network professionals are paid to do. Reusing an already debugged solution is good business and makes optimum use of company assets.

E-mail is an ideal, inexpensive tool to help you set up and maintain an enterprisewide experience database. Use of E-mail in organizations snowballs once users see the results that can be obtained from it, thus adding even more to the experience database.

Every time you share valuable information, you're adding to the database and building relationships. Best of all, you will respond faster to that problem on your desk today and with a greater likelihood of success.

Dietrich, a communications and networking consultant based in St. Louis, is currently writing a book outlining the benefits of E-mail.

"WE KNOW WHAT A PERSON THINKS, not when he tells us, but by his actions," said Isaac Bashevis Singer. You can tell us what you think by acting now; write a column for *Network World.*

Columns should be 600 words long and submitted on disk, via modem or through MCI Mail at 390-4868.

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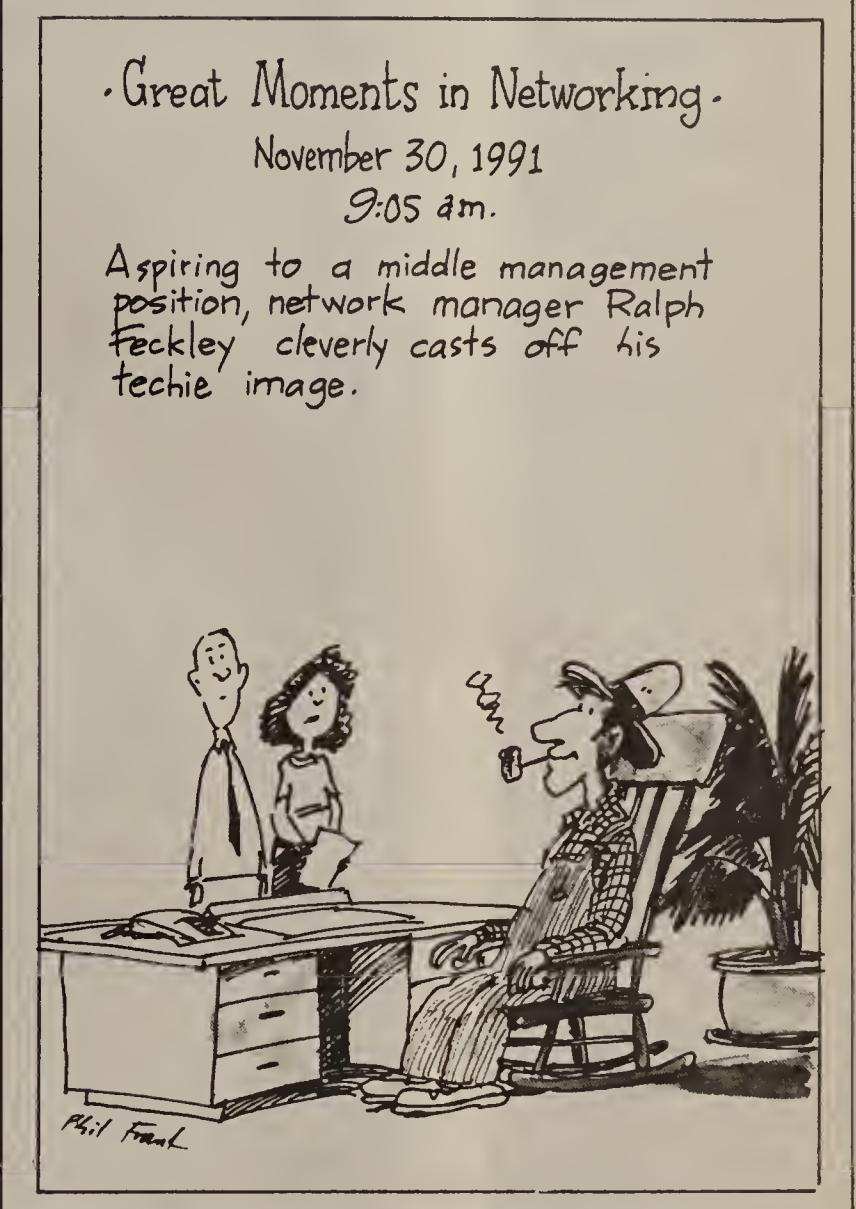
TELETOONS

BY FRANK AND TROISE



LETTERS

Telemarketing controversy

I am writing to respond to a letter from James Innes of MicroNet, Inc. (*NW,* April 27) regarding my opinion article "Congress blunders in trying to manage telemarketers" (*NW,* March 23). His letter suggested that the approach I proposed would be unworkable because it would require users to block out entire exchange codes just to block a few telemarketers. The letter even suggested that a user company might have to block all calls from the New York metropolitan area. This was such a bad misinterpretation of what I had written that I felt compelled to reply.

In the article, I wrote: "The first step toward controlling unwanted calls is to classify the callers and then assign telephone numbers with specific exchange codes for each class." The result would be that if users blocked all calls from a specific exchange — for example, the telemarketer exchange — they would block all calls from a specific class of callers and not from a geographic area.

I have been involved in telephone system design for almost 20 years and have worked on countless network dialing plans. I have managed not to block out New York City on any of those projects.

Michael Finneran
President
dBrn Associates, Inc.
Hewlett Neck, N.Y.

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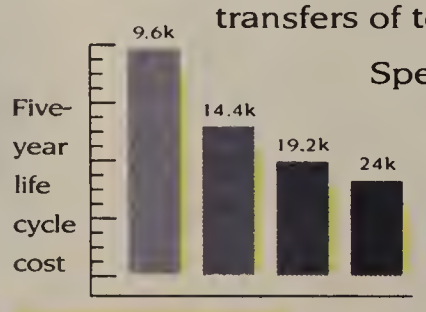

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Imaging makes its mark on nets

Powerful image processing systems are becoming commonplace in such document-intensive industries as banking, health care and insurance as firms discover the benefits of storing electronic images of documents on high-end systems and manipulating them on workstations.

Accruing the benefits of imaging places a burden on network planners, though. Once a firm opts to install an imaging system, network planners must quickly set out to uncover the most efficient way to shuttle images between mainframes, minicomputers, and powerful servers and workstations.

On the surface, this may seem like a daunting task because image file sizes are often in the megabyte range. The requirement to ship such large files across an enterprise can place heavy demands on the network.

While these demands dictate high-performance nets, they do not necessarily imply that network planners must install a fiber-to-everywhere, gigadollar-per-second solution. Instead, imaging applications can be designed to minimize network traffic and still maintain an acceptable response time.

The need for a proper plan to design image applications came to the forefront as the implementation of high-end imaging systems was spurred by significant developments in imaging and computer processing technology over the past few years.

Initial imaging products were so CPU-intensive that they required dedicated systems to manage image databases and interact with applications running on general-purpose computers.

Advances in processor technology have made it possible for general-purpose computers to run imaging applications and maintain the image database. Today, more than 300 vendors offer a variety of high-end imaging systems and related services that utilize common operating environments, processors and network utilities.

These high-end imaging systems run on mainframes or powerful minicomputers. Another class of imaging products running on personal computers or PC-based local-area network servers is less functional and costs less than the mainframe and minicomputer counterparts.

Both classes of imaging products consist of tools that enable system designers to craft imaging applications. Factors that differentiate imaging products include the character of the programming environment, the richness of the application program interfaces and the power of the processing platform.

Low-end imaging products have received significant publicity in the past year, thanks to the emergence of products costing $1,000 to $40,000.

These products typically consist of a collection of tools that enable developers to build a client/server-based image storage and retrieval system. The flexibility and affordability of these systems have reinforced the evolution of document image processing from specialized advanced technology to an information utility.

Low-end products are generally oriented toward work group automation and are commonly used for casual support of knowledge workers. In many cases, the low-end support is oriented toward simple storage and retrieval applications. (A detailed Buyer's Guide on these systems will appear in the Sept. 14 issue of *Network World*.)

High-end products are designed for high-volume, mission-critical, processing-intensive applications. To support such applications, these systems require powerful processors, typically a mid-range processor. Some of the larger implementa-

(continued on page 44)

With proper design, users can reap the benefits of imaging without placing an undue burden on the net.

By BOB REINHOLD and ALLEN HARRIS

(continued from page 43)
tions utilize a mainframe, but there are less than 100 such sites in operation.

Larger systems also generally offer a number of advanced functions that are enabled by the power of the processing platform. Examples of such functionality include inbound and outbound faxing, optical character recognition, management of voice and compound architecture documents.

Figure 1 on this page lists a number of the leading high-end document image processing products and demonstrates the variety of platforms on which these products operate. Digital Equipment Corp.'s DECimage includes imaging server software that runs on DEC VAX minicomputers. The FileNet Corp. product offers client/server imaging software and storage components that run on an IBM RISC System/6000 and proprietary Unix servers.

IBM's ImagePlus product has a number of personalities. The low-end PC LAN-based version is a highly distributed system that offers a table-driven approach to creating image applications from its tool set. Database, applications and image management can be distributed among a number of PC-based servers, and communications between these processors is achieved through an IBM Token-Ring LAN.

ImagePlus running on the Application System/400 minicomputer or System 370-based mainframe can be implemented in a less distributed fashion, with more of the processing concentrated in the minicomputer or mainframe.

products for IBM's RS/6000. Wang also recently signed an agreement to supply imaging technology to Computer Associates International, Inc.

A number of other vendors offer large-scale imaging systems using IBM hosts and Unix-based servers. Included among them are Alpharel, Inc., Litton/Integrated Automation and TRW Financial Systems, Inc.

An imaging system sampler

Figure 1

Vendor	Product	Hardware platform
Digital Equipment Corp.	DECimage	DEC VAX systems
FileNet Corp.	FileNet Document Image Processing System	Unix-based systems
IBM	ImagePlus	PC-based servers, AS/400 minicomputers, System 370 mainframes
Plexus Software, Inc.	XDP, XDC, ImageFlow	Unix-based systems
Wang Laboratories, Inc.	Wang Integrated Image System Open/image	VS minicomputers, PC LANs, IBM RS/6000s planned

GRAPHIC BY SUSAN SLATER SOURCE: ERNST & YOUNG, VIENNA, VA.

The networking capabilities of these imaging systems are largely based on the type of networking supported by the hardware platform. IBM's ImagePlus, for example, utilizes Token-Ring LANs for local distribution and Systems Network Architecture communications in the wide area. Unix-based products utilize common Ethernet LANs for local communications and Transmission Control Protocol/Internet Protocol for wide-area links. DECimage relies on Ethernet and DECnet.

Because large image systems are commonly used for high-volume mission-critical applications, the networks that support them must be sufficiently robust and designed to deliver mission-critical performance for the wide-area transmission volumes expected. Requiring such performance from the network forces users to make a number of decisions regarding network speed and the performance requirements of LAN and wide-area network components.

> The key to designing a low-cost network is minimizing the high-speed links.
>
> ▲▲▲

Currently, the multiple varieties of ImagePlus cannot be easily integrated into a coherent system, which means information and applications from one cannot be easily ported to another.

The Plexus Software, Inc. product offers client/server software running on Unix-based servers made by a number of vendors, including ATT/NCR Corp., Data General Corp., Hewlett-Packard Co. and Sun Microsystems, Inc.

Wang Laboratories, Inc. was an early entrant into the large-scale imaging system market. Wang offers imaging firmware on LAN-based and Wang VS minicomputers and will soon offer

Image traffic

High-end document image processing applications commonly present document images to the user in a manner that mimics a paper system — one or two pages are displayed at a time on the workstation screen, and all information relating to a transaction or customer account is portrayed as residing in a logical folder.

To be perceived as successful, therefore, a document image system must deliver and manipulate document images in times that surpass those of the paper system it replaces. Using this rule of thumb, networks should be able to support a set of common requirements.

First, the network should have the ability to turn from one page in a folder to another in less than one second. The network should enable a user to retrieve a particular document image from an active file in that user's own work queue in under five seconds. Lastly, the network should be able to deliver a file folder from active storage in an electronic file cabinet in 15 to 20 seconds.

These response requirements dictate the use of high-speed network components. But the pervasiveness of high-speed technologies in one's network depends heavily on the nature of the document image application and the predictability of a user's requirement for a certain image file.

The predictability of document image requests can be exploited to design a cost-effective, high-performance solution that minimizes the requirement for expensive high-speed resources.

It is also beneficial to have an understanding of imaging system components and how they operate. The input stage of a document image system typically consists of scanning, indexing and compression components.

Scanning equipment creates a binary file representing the black-and-white picture elements that comprise a document image. Indexing associates identifying information with a scanned image that enables the image to be stored and retrieved efficiently.

Because most documents contain large regions of continuous dark or light objects, significant savings in storage requirements can be achieved by compressing the image.

For example, instead of storing 100 binary zeros in a row, a compressed document might instead store a short bit pattern that represents 100 consecutive zeros. The most popular document compression standards are CCITT Group III and Group IV, which were popularized through facsimile technology.

Compressing the scanned image of a one-page document using the Group III standard results in an average file size of approximately 50K bytes.

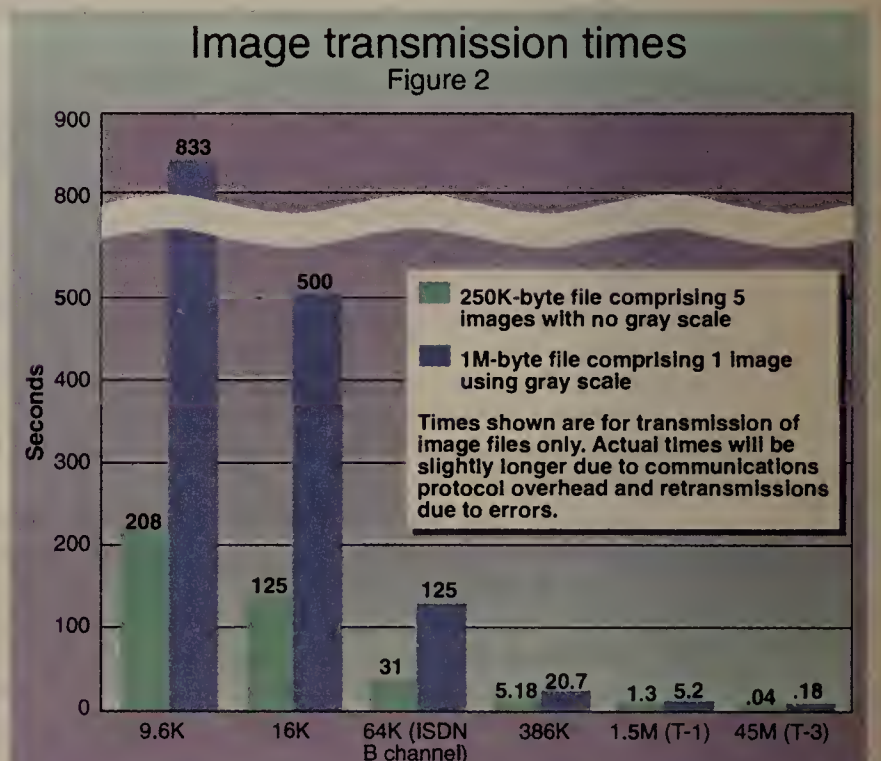
Assuming an average document has five pages, a user request for this document generates a 250K-byte transmission. The average image size is increased greatly if gray-scale images are added to the document. Scanning photographs for insurance claims applications, for example, can generate image files that range into the tens of megabytes.

Figure 2 on this page depicts the impact of circuit speed on network transmission time for images. The model used to generate Figure 2 illustrates a best case result. These transmission times are increased slightly by the overhead associated with communications protocols and retransmissions due to errors.

Note that even in this optimistic example, one needs to ship images from the storage device to the user workstation over a medium that can support multiple megabits per second to achieve delivery targets in the range of several seconds. Transmission speeds of this magnitude are provided by T-1 and T-3 circuits, as shown in the figure. The throughput of common LANs, such as 10M bit/sec Ethernet or 4M bit/sec Token-Ring, exceed the performance of a T-1 circuit.

Image transmission times

Figure 2



GRAPHIC BY SUSAN SLATER SOURCE: ERNST & YOUNG, VIENNA, VA.

The examples in Figure 2 demonstrate that there is a requirement for a high-speed link between the storage device and workstation.

Low-cost design

The key to designing a low-cost network is minimizing the size and number of high-speed links. This can be done by carefully designing the location of image storage devices and making sure that frequently accessed images are stored locally for their expected active life.

Building a network with low-speed lines that supports system requirements for image delivery, quality and reliability is a challenging task. Design techniques that can be effective in shaping low-cost solutions include optimizing the document storage and retrieval strategy and exploiting image request predictability.

Image system developers should consider a document storage and retrieval strategy that responds to a general information request by delivering to the workstation an index of the documents contained in a file folder instead of the entire folder. The delivery of an electronic file index with a description of the documents contained in the folder has shown to be an effective technique for enabling users to request single documents.

For example, consider the case of an insurance claims processor who desires images of all correspondence from Mr. Jones regarding his accident claim but not the information on his numerous auto and home owner policies. By delivering an index of Mr. Jones' folder and enabling the claims processor to selectively request particular images, the system could significantly reduce its bandwidth requirements.

An interesting benefit is that in a reasonably high percentage

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(continued from page 44)
of the ad hoc file request transactions, delivery of the index alone is sufficient. This is particularly true in customer service applications in which calls are made to determine whether a particular document has been received and is in the folder. In such a case, there is no need to view the image, just confirm that it exists.

In situations where document requests are predictable, a file containing the most frequently accessed images can be downloaded to a local storage device at the start of the day. Fetching images and storing them locally can significantly reduce the bandwidth requirements of the image transport system.

For example, a customer service application can be designed to deliver images to agents for processing at the start of the day. Using this technique, a network designer can limit high-speed transport to the LAN at the remote site.

Such a design utilizes lower speed WANs to deliver images to a local image storage server during periods of relatively low network utilization. Response time is met through high-speed local delivery, and the efficiencies of central storage are maintained.

With large image files, LAN traffic can mount quickly.

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LAN selection

Once the applications have been designed, it's time to build the network. A key element in making an imaging network run well is choosing the right LAN to deliver images across the campus environment.

A common question of network planners is whether Ethernet or token ring is the better transport mechanism for local image networks. With large image files, LAN traffic can mount quickly.

The argument is that Ethernet is unsuitable for imaging because its access method — carrier-sense multiple access with collision detection — results in more packet collisions as traffic increases. These collisions force packet retransmission, which in turn, further increases traffic and makes workstations wait longer to access the network.

This is not a problem with token-ring networks, which use an access method that allows only one device to communicate at a time. But a token-ring transmission must pass through all nodes that sit between the sender and receiver. Therefore, the larger the LAN, the more likely that transmission time will be slightly longer.

For all practical purposes, however, the access mechanism of a LAN is not the important differentiator.

Properly designed Ethernets will maintain network utilization well below the point in which additional traffic causes infinite access time. Similarly, the fixed delay caused by the requirement of a transmission to pass through even a large number of stations on a well-designed token ring is minimal.

Without a black-and-white argument, then, how does one choose a LAN?

Network planners should strongly consider implementing an image system that utilizes the LAN technology predominant in their existing environment or central to the organization's long-term strategic plan.

If token-ring networks are the predominant LAN technology, investigate imaging products that work well in these environments, including those that run on IBM mainframes or AS/400s. Similarly, if your firm has a sizable Ethernet investment, consider VAX- and Unix-based imaging systems.

Selecting a consistent LAN technology makes imaging network management easier.

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Selecting a consistent LAN technology makes imaging network management easier. It also simplifies the integration of image technology with existing LANs. This is true because the net management staff will have experience in the selected LAN technology, as well as the tools and spare components to support troubleshooting and repairs.

If there is no predominance of net management expertise in one LAN technology, network planners should focus on the LAN environment the selected imaging system vendor supports.

Choosing the LAN the vendor supports is beneficial because new and enhanced products will be available on that LAN first. Furthermore, the vendor will have significant experience with the potential problems associated with creating a system for that LAN.

For example, if the product that best supports your requirements runs on a Unix platform

and was developed to run over Ethernet, then select Ethernet as your LAN technology.

WAN selection

Once a LAN has been chosen, network planners can turn their attention to adopting the proper WAN links between sites. The principal concern here is meeting the performance goals of the imaging system in the most cost-effective manner.

Efficiency in design is more critical in this region because costs of wide-area links can mount rapidly. Strategies for serving the WAN depend heavily on the number of image system users at the remote site.

Nets that support sites with a large user population consist primarily of routers that connect distributed processors and LANs.

If there is a significant user population and low response time is critical, large sites are commonly supported by dedicated, high-speed links operating at fractional T-1 speeds of 256K bit/sec or greater.

While these lines often display a low utilization rate, such high-speed links are required to support quick retrieval of document images from a central scanning/storage location.

An example of a large site requiring high-speed wide-area links is a rural office in which low-cost labor is utilized to process documents that are received and scanned in a metropolitan environment.

New high-capacity switched services offer a cost-effective alternative to dedicated links for low-volume remote sites. Technologies in this area include Switched 56K bit/sec circuits, Integrated Services Digital Network Basic Rate Interface lines, frame relay and metropolitan-area networks based on the emerging IEEE 802.6 standard.

In enterprises that already possess a virtual private network service for voice communications, switched digital links operating at 56K bit/sec may be available for the cost of a telephone call. Such links typically require dedicated access to the virtual network and only support the transfer of files between on-network sites. ISDN promises to support similar connectivity in metropolitan areas.

Public frame relay nets can provide a more efficient implementation of dedicated network functionality in certain topologies. Because of the pricing structure, frame relay implementations generally are cost-justified when the traffic flows are distributed among a number of sites.

Network planners should explore frame relay to support nets in which a number of image servers are distributed throughout the WAN and there is a significant ad hoc requirement to access these remote servers.

Metropolitan-area networks using Switched Multimegabit Data Service are under trial in a number of cities. Metro nets are designed to provide high-speed switched connectivity. Network planners should consider these services as they become tariffed and available in their areas.

Facsimile technology is useful in moving documents between a central site and low-volume locations. Group III and Group IV document image compression standards commonly used to conserve storage space are also the standards for fax transport over telephone lines.

By constructing a network that incorporates LAN-based fax gateway technology, network implementors can construct a cost-effective remote document I/O capability.

In such an implementation, a Group III fax machine operating at 9.6K bit/sec or Group IV machine operating at 56K bit/sec would scan and print images at remote sites. These machines would also communicate with a fax board in a central site server instead of with another fax machine.

> Strategies for serving the WAN depend on the number of users at the remote site.
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Final words

These application design and network selection techniques can go a long way in easing the pain of developing an imaging architecture. Such an architecture ensures uniformity in application identification and selection, identifies classes of systems for a range of applications, establishes image exchange standards and contributes to long-term network strategy development.

Large-scale imaging systems will play a role in architectures focused on high-volume and processing-intensive applications. As more systems that include image processing are constructed, image distribution requirements will increase and cost-effective, high-bandwidth, switchable network technologies will become more important.

While movement toward color and gray-scale image transmission will continue to provide opportunities to exercise bleeding-edge technology, the good news for network planners is that today's document imaging systems can be supported using common computing and communications technologies.

Reinhold is a senior manager for Ernst & Young's Network Strategies Practice in Vienna, Va. Harris is a senior manager for Ernst & Young's Northeast Image Processing Consulting Practice in New York.

Taking a look at fraud protection

continued from page 1

that have been in place since last year. These services vary in their protection level, with SprintGuard Plus offering the greatest liability coverage (see graphic, this page).

AT&T quickly followed Sprint's cue with last month's introduction of NetProtect. The NetProtect program is available in four flavors — Basic, Enhanced, Premium and Software-Defined Network — that also provide a range of protection. The carrier offers a number of associated programs, such as the Security Audit Service and the Fraud Intervention Service, designed to help users identify and curtail toll abuse.

So far, MCI hasn't announced anything that stacks up against its rivals' protection plans. But while MCI has not announced a formal fraud monitoring program, it does have in place many of the same elements of both the AT&T and Sprint programs. In addition, MCI is offering a one-time partial credit to customers hit by fraud in order to help spread the risk.

In 1988, MCI instituted its CPE Fraud Awareness and Prevention Program to help customers fraud-proof their nets and secure their customer premises equipment.

The critical issues

In evaluating the carriers' approaches, there are a number of critical issues customers should consider. Users need to understand which services will be monitored, for example.

Under NetProtect, AT&T monitors traffic on all 800 and international outbound services. Sprint monitors international traffic from Sprint UltraWATS, Virtual Private Network and Clarity (dedicated access only), as well as 800 services. Its SprintNet program monitors Sprint data services.

AT&T and Sprint do not monitor domestic outbound traffic.

Both monitor toll-free calls coming from outside the U.S. but only from U.S. gateways. They currently cannot "see" into the foreign carrier nets. Expanding the programs to cover other international services will become more important as international fraud is expected to grow.

"Overseas, the autodialers and hacker networks that enabled fraud in the U.S. are just now starting to get established," said Albert Nasser, AT&T's International 800 product manager. "The level of interest from overseas carriers in providing fraud monitoring has grown remarkably. But don't expect miracles overnight."

Users also need to understand how the carriers monitor traffic. Sprint checks traffic to all international outbound destinations. AT&T says it has the same ability but generally looks only at traffic to specific countries, particularly those with a history of problems.

AT&T looks at traffic in near real time as it flows from the carrier's network switches. That real-time network monitoring is at the heart of its security monitoring operations and is quite an advantage for customers.

Users can also do that with AT&T's On-Line Call Detail Data-Real Time (OCDD-RT) system, which was made available last month. With OCDD-RT, customers can get a stream of completed call data within two minutes from the time the call is completed, allowing users to pinpoint abnormal traffic patterns.

"Customers can print reports of what is happening at that moment on [their] networks and stop fraud before it ramps up," says Marc Leichtling, AT&T's NetProtect product manager.

Sprint looks at traffic on a previous-day basis, with data traffic downloaded into its monitoring system each night. While it isn't real time, the approach is more than sufficient, says Bob Fox, Sprint's assistant vice-president of corporate security.

"Our monitoring systems are catching fraud so fast that the dollar amounts are rapidly becoming insignificant," he says.

AT&T's SDN NetProtect uses newly developed real-time monitoring and control to track fraud on SDN nets. It packages multiple security features, including authorization codes and a version of OCDD-RT for SDN, along with other security-related management systems.

SDN's Customer Traffic Detail Reporting system enables users to monitor traffic in real time from an on-site terminal and generates alarms when thresholds are exceeded.

While it has not announced a formal program, MCI also monitors traffic for fraud, looking at traffic in aggregate, rather than deviations, for a particular customer profile.

According to MCI, more than 70% of all fraud originates in the New York area. MCI has installed special reporting equipment on its switches there that allows the carrier to track fraudulent traffic coming from that area.

MCI downloads data from these units frequently during the day and, when it detects fraud, works with a customer to resolve the problem. While MCI does this for all customers at no cost, the approach uncovers only a portion of fraudulent traffic and does not address traffic outside of the monitored areas.

MCI customers also can use MCI's Integrated Network Management System to discern fraudulent calling on its Virtual Network (Vnet) and 800 dedicated access lines.

Liability

Even though the carriers monitor traffic closely for the selected services, they won't completely absolve users from liability for toll fraud losses.

Under SprintGuard CPE Security, customers are responsible for all fraud costs. With SprintGuard Plus, international outbound service is monitored and the customer is responsible for the first $25,000 in losses. For domestic and international inbound service, customers are liable for all fraudulent charges.

AT&T's programs include inbound 800 and outbound international service. Liability limits range from none with NetProtect Basic, to virtually complete protection under NetProtect Premium. Under NetProtect Enhanced, if the customer detects the fraud before AT&T does, maximum liability is cut in half, from $25,000 to $12,500.

A number of things aren't covered under these AT&T and Sprint liability protections. These include customer premises equipment fraud on another carrier's network; customer premises equipment fraud terminating within the U.S. (Sprint does not cover Puerto Rico and the Virgin Islands, while AT&T does); customer premises equipment fraud resulting from customer negligence or disclosure of proprietary information; and customer premises equipment fraud resulting from improper installation of customer premises-based software and equipment or improper execution of procedures.

On May 1, MCI filed new tariff language that offers customers a 70-to-30 split of responsibility for fraud. Regardless of which service is affected, MCI will credit the customer's next monthly invoice for 30% of fraudulent usage, less taxes, monthly nonrecurring charges and any previously credited discounts.

But there's a catch. The credit is only applied once per custom-

(continued on page 58)

Comparing fraud protection services

Carrier	Service name/ Description	Services and hardware monitored (1)	Liability limits	Customer requirements	Cost
AT&T	NetProtect Basic/Monitoring and fraud detection service	Domestic and international 800 and outbound services to selected countries	Customers retain all liability	None	None; provided automatically
	NetProtect Enhanced/Monitoring and fraud detection service with fraud liability cap	Domestic and international 800 and outbound services to selected countries	Customers liable for up to $25,000 (only $12,500 if customers detect the fraud); customers liable for all fraud occurring 2 hours after notification of fraud by AT&T	1-year contract, meet AT&T's CPE requirements, fraud-free sites for 2 weeks following an incident, must have 800 and outbound long-distance service at each covered location	Not tariffed yet
	NetProtect Premium/Monitoring and fraud detection service with higher liability protection	Domestic and international 800 and outbound services to selected countries	Customers are liable only for fraud occurring 2 hours after notification of fraud by AT&T	1-year contract, meet more stringent AT&T CPE requirements, fraud-free sites for 48 hours following an incident, must have 800 and outbound long-distance service at each covered location	Not tariffed yet
	SDN NetProtect/ Monitoring and fraud detection service supported by on-premises terminal that helps customer monitor call traffic	AT&T SDN	Customers remain liable for all usage	Must purchase SDN Caller Screening Group feature and 1 day of consulting	Free installation; service fee of $1,475 per month and consultation fee of $750 per day
	Security Audit Service/Consulting to help users identify and minimize security risks to AT&T PBX and voice messaging systems	System 75 and 85, Definity, Dimension System and both Audix and PC-based Audix Voice Power Systems	Not a liability protection service; helps customers prevent fraud	Customers can choose to accept or deny AT&T's suggestions	$350 per hour
	Fraud Intervention Service/Consulting to help detect and stop fraud in progress	All AT&T PBX and voice mail equipment	Not a liability protection service; helps customers prevent fraud	Use AT&T CPE	$150 per hour
Sprint Corp.	SprintGuard CPE Security/Monitoring and fraud detection service for long-distance services	UltraWATS, VPN, Clarity (dedicated); domestic and international 800 services are monitored but not covered for liability	Customers retain all liability	Provide a contact person	None; provided automatically
	SprintGuard Plus/ Monitoring and fraud detection service for long-distance services	UltraWATS, VPN, Clarity (dedicated); domestic and international 800 services are monitored but not covered for liability	Customers liable for up to $25,000, Sprint will pay remaining amount, not to exceed $1,000,000; customers liable for all fraud occurring 4 hours after notification of fraud by Sprint	2-year contract, fraud-free sites for 30 days following an incident, $30,000 per month for voice services, 8-digit direct-inward system access, external call transfer capabilities eliminated, security on CPE remotes, delete vendor-installed default passwords, 3 contacts available 24 hours a day, CPE profile	Onetime activation fee of $100 per location, not to exceed $5,000; monthly fee of $100 per location, not to exceed $5,000
	SprintGuard SprintNet/ Monitoring and computer hacking analysis service for data services	X.25 public data network	Customers retain all liability	Provide a contact person	None; provided automatically

CPE = Customer premises equipment
VPN = Sprint's Virtual Private Network

Footnote: (1) International 800 only monitored from U.S. gateways.

SOURCE: TELECHOICE, INC., MONTCLAIR, N.J.

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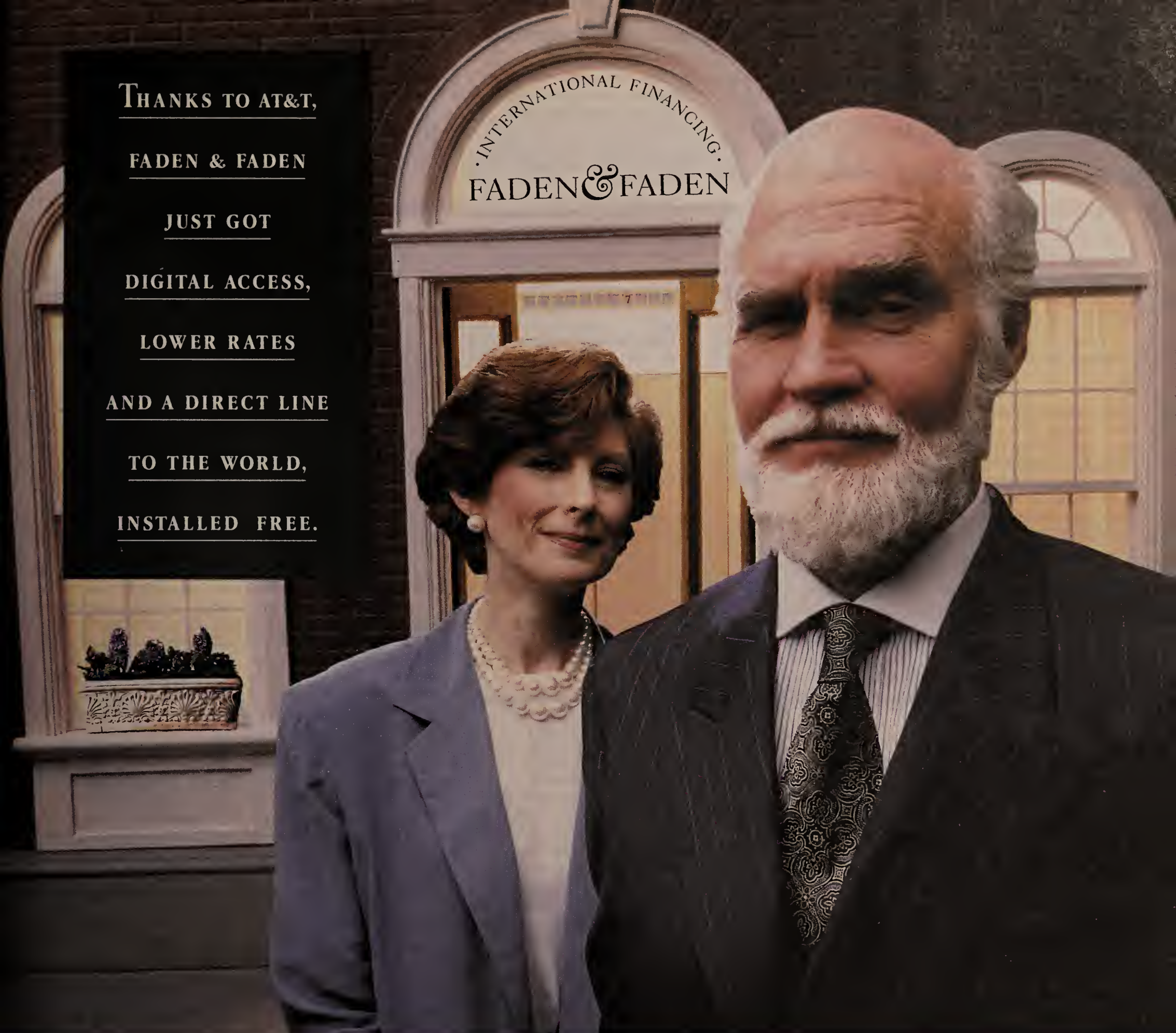

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PeerLogic readies enhanced distributed systems package

New Pipes Platform supports NetWare, OS/2, AIX.

By Timothy O'Brien
West Coast Bureau Chief

SAN FRANCISCO — PeerLogic, Inc., a developer of distributed systems software, will soon announce a new version of its software that supports Novell, Inc.'s NetWare as well as IBM's OS/2 and AIX operating systems, according to sources close to the company.

Like the existing release, Pipes Platform Version 3.1 runs above various heterogeneous operating systems on the network and provides the communications management required to deploy distributed applications in a multiprotocol or a mixed operating system environment.

Pipes Platform is also expected to support in the next 90 days Microsoft Corp.'s Windows, DOS, Sun Microsystems, Inc.'s SunOS and the MVS mainframe environment.

Sources also predict that the NetWare implementation will be configured as a NetWare Loadable Module, allowing the Pipes Platform software to run directly on NetWare file servers.

Middleware

Founded in 1986, PeerLogic's mission has been to provide enabling technology for distributed computing. Its Pipes Platform can be considered part of the emerging category of software known as "middleware" that resides between applications and the local operating system.

The object-oriented, message-based architecture of Pipes Platform includes a common application program interface that shields application developers from the complexities of different operating systems and network protocols.

Using Pipes Platform, developers can build distributed client/server or peer-to-peer applications without knowing the underlying communications or network protocols since the application communications code is the same for all operating system environments.

In addition to development time being reduced, maintenance of applications can be less costly because much of the functionality associated with communications code — for example, error handling — is provided by the Pipes kernel.

Pipes Platform handles all network I/O requests on behalf of the application. The software employs a dynamic routing scheme between peers on the network and distributes its own work load evenly over the network to provide better performance and reliability.

Pricing

The Pipes Platform Software Development Kits are available now and are priced at $495 for OS/2, $595 for NetWare 386 3.1 or higher and $695 for AIX. Current Pipes Platform users can upgrade for $149. That charge is $99 if the software is purchased by July 15, 1992.

Regional long-haul carriers merge in $560m stock swap

By Bob Brown
Senior Editor

Regional long-haul carriers Advanced Telecommunications Corp. (ATC) of Atlanta and LDDS Communications, Inc., based in Jackson, Miss., last week announced plans to merge in a $560 million stock swap.

The deal — which the companies said creates a strong new competitor to AT&T, MCI Communications Corp. and Sprint Corp. in the long-distance market — is the second telecommunications company merger to be announced recently. Two weeks ago, Sprint and Centel Corp. announced plans to unite in a $2.85 billion stock swap.

The combined ATC-LDDS company would have annual revenue between $600 million and $700 million, compared to $5.4 billion for Sprint, the third-largest long-haul carrier. But the new company will be going after the Big Three's high-end business customers by rolling out new business services and expanding its presence through acquisitions, an ATC spokeswoman said.

Currently, both ATC and LDDS specialize in providing long-haul service to small and medium-sized businesses, users that the Big Three long-haul carriers are pursuing more aggressively these days. LDDS operates in 27 states in the Southeast, Southwest and Midwest, while ATC provides service in 25 states, many of which overlap with LDDS' service areas.

ATC has been moving aggressively itself of late. Among other things, the company recently established a national accounts organization and unveiled a virtual private net service. It has also begun seeking regulatory permission to originate long-haul traffic in the 48 continental states.

"ATC is becoming a true powerhouse in the South and is making heavy moves toward becoming a national service provider," said Daniel Briere, president of TeleChoice, Inc., a Montclair, N.J., telecommunications consulting firm. "The company is making the right moves."

The merger is expected to enable the carriers to save as much as $24 million a year in operational expenses, largely through better deals on leased network facilities and staff consolidation.

ATC, which claims to be the fourth-largest publicly held long-haul carrier based on revenue, posted revenue of $359 million and earnings of $24.5 million for its 1992 fiscal year, which ended March 31. LDDS reported revenue of $263.4 million and earnings of $17.7 million.

The merger, which is subject to regulatory and shareholder approval, is expected to be completed in the fall.

UB, BBN join on Access/One

continued from page 1

their own technology.

Ungermann-Bass confirmed it will be making a joint ATM product announcement with BBN this week but declined further details.

Like vendors such as AT&T, which plans to evolve its StarLAN hub into an ATM switch for local-area networks ("AT&T moves toward ATM hub offering," *NW,* June 1), Ungermann-Bass will enable its hub to support local ATM switching. But the hub will also have the ability to act as a traffic feeder into a BBN ATM premise switch.

BBN's high-speed cell relay switch, expected to debut this fall, will link to wide-area ATM services and support from T-1 to potentially gigabit speeds.

Frank Dzubeck, president of Washington, D.C.-based Communications Network Architects, Inc., said Ungermann-Bass will be using BBN cell relay chip technology to develop ATM adapter cards for workstations and an ATM switching module for the hub. Together, the cards and module will enable the Access/One to support multimedia-capable workstations and servers over twisted-pair wiring at speeds up to 155M bit/sec.

Ungermann-Bass will also adopt the technology to develop a PlusBus-to-ATM Gateway that will link the hub to the BBN ATM switch. PlusBus is the Access/One's 320M bit/sec backplane.

ATM is a cell multiplexing and transmission technology that uses 53-byte fixed-length cells and supports transmission speeds from 51M bit/sec up to 2.4G bit/sec.

Experts say ATM technology promises to revolutionize high-speed data communications because of its ability to quickly transport and route multimedia traffic over LANs and WANs.

"The key point of ATM is to radically simplify the overall design of networks," said John McQuillan, president of Cambridge, Mass.-based McQuillan Consulting.

Ron Zelman, technical services manager at the City of Hope National Medical Center in Duarte, Calif., said he is looking forward to ATM capabilities in the Ungermann-Bass hub. Those features are expected to be available by early next year.

"FDDI will not be enough to satisfy our bandwidth needs," Zelman said. "We have growing image storage and retrieval applications, and we are also looking to put patient charts on-line."

Other hub vendors said they will be rolling out ATM support over the next 18 months.

Bert Williams, a marketing manager at SynOptics Communications, Inc., said, "There's growing consensus in the vendor and user community that ATM will be the next-generation LAN technology, and we are positioning ourselves accordingly."

Newbridge to unveil switch

continued from page 2

Users of Newbridge's 3600 and 3645 MainStreet multiplexers can upgrade to the 36120 by adding a Fastbus interface module and packet engines, called Packet Transfer Engines (PTE).

The 36120 is also intended to help users migrate to Newbridge's 36150 Asynchronous Transfer Mode switch — due out in mid-1993 — since it uses many of the same modules.

But the switch's distinguishing feature is its compliance with the CCITT V.120 standard for packet segmentation and reassembly, according to James Michaels, assistant vice-president for network planning at Newbridge. This capability improves performance by segmenting large packets into smaller ones of a user-defined maximum size, Michaels said. Frames are then reassembled to their original size at the receiving node.

Keeping the net running

The segmentation/reassembly feature helps ensure that large packets do not tie up network bandwidth at the expense of smaller ones, thus preventing network congestion, Michaels said.

It also offers improved throughput compared to other switches, which typically wait to receive entire large packets to de-

(continued on page 62)

Pack helps users coordinate

continued from page 15

search the schedules of designated individuals to determine a time when they can all meet. The software provides a list of available time slots. When the user selects a meeting time, Instant Recall Office automatically updates the schedules of the meeting participants.

It will also allow users to mark which appointments, notes, tasks or contacts in their personal files can be viewed and modified by others.

Audio and visual alarms will remind users of upcoming deadlines and changes in tasks or assignments. Users also can push all deadline dates or schedules ahead or back by a preset amount by modifying a single menu. The changes appear automatically in each project team member's personal schedule.

The software uses a proprietary database that lets users input up to 30 pages of text per entry. It also supports text indexing so that users can search their data by key words or categories.

Paul Mayerowitz, director of administration and real estate at Securities Industry Automation Corp. in Brooklyn, N.Y., plans to use Instant Recall Office to keep track of short- and long-term projects handled by his 15-member staff.

Vote of confidence

"Compared to other personal information managers, [Instant Recall Office] offers a combination of features that make it easy to track tasks, create and find notes associated with specific tasks and prepare monthly status reports. It is a critical tool for managing our operation. It's also dirt cheap," Mayerowitz said.

Users can hot-key to Instant Recall Office from another DOS or Microsoft Corp. Windows application and cut and paste data between the two.

Concurrent licenses for Instant Recall Office cost $249 for two users, $495 for five users, $795 for 10 users, $1,495 for 20 users and $4,995 for 100 users.

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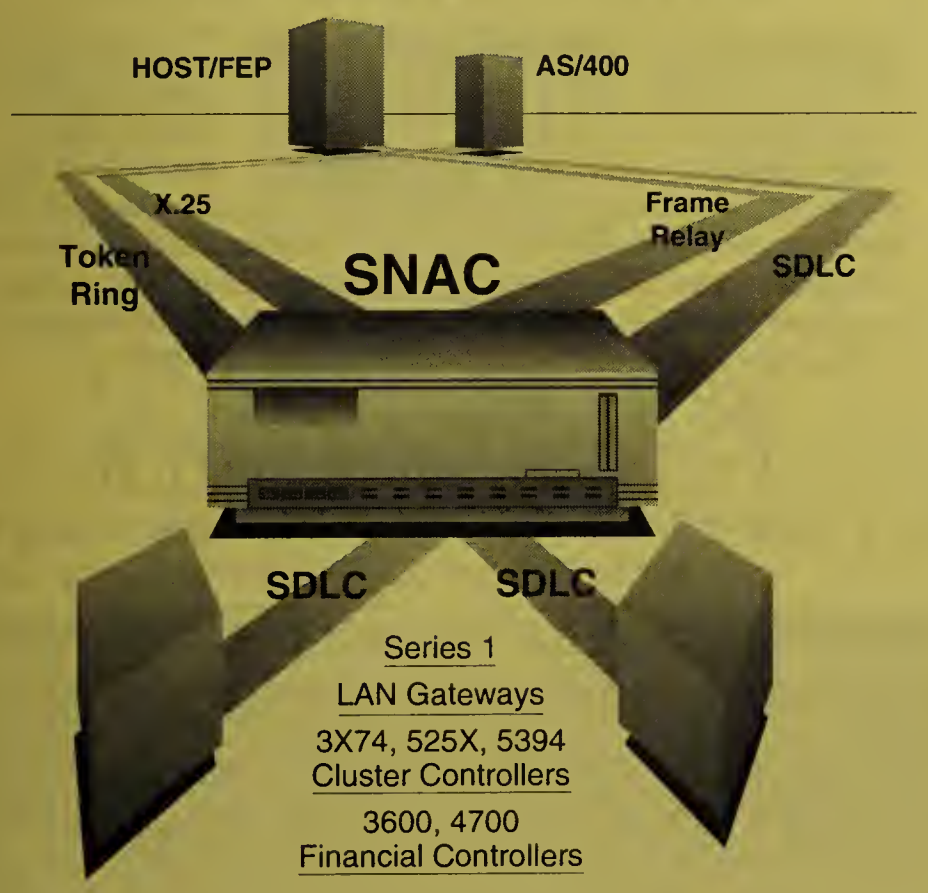

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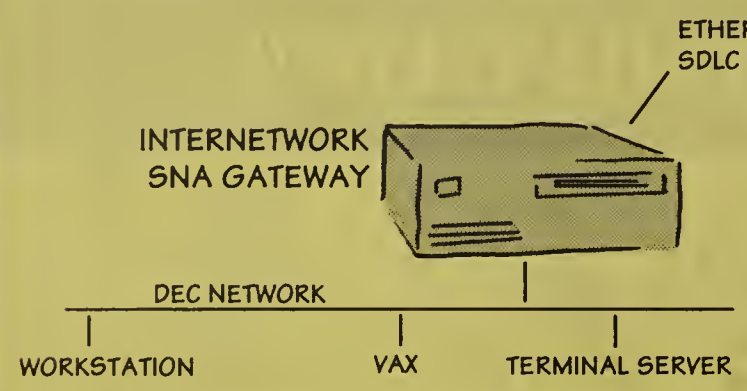

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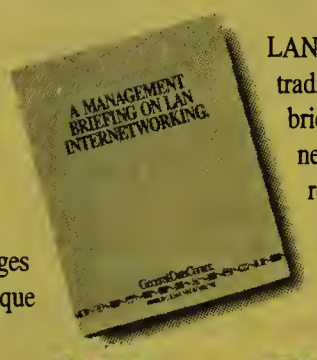

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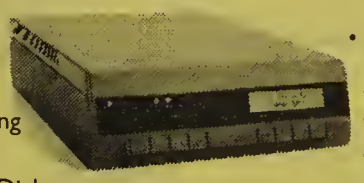

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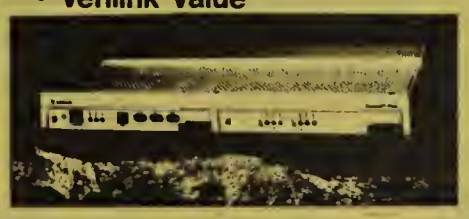

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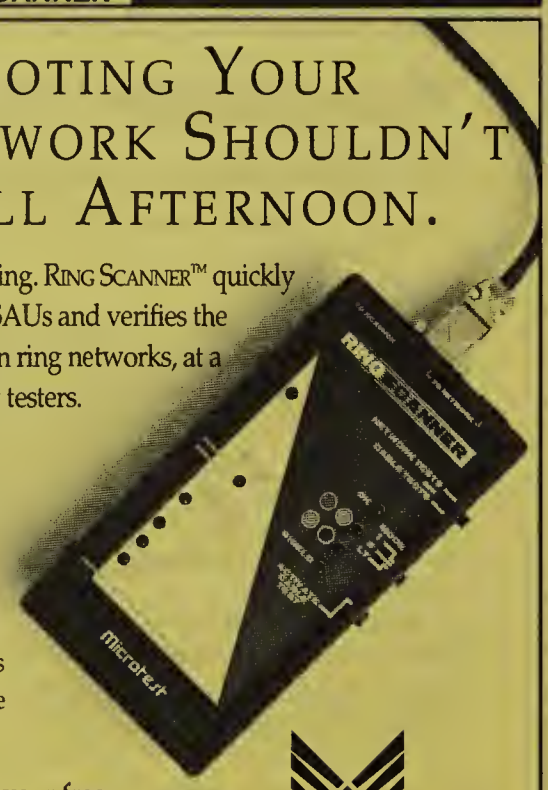

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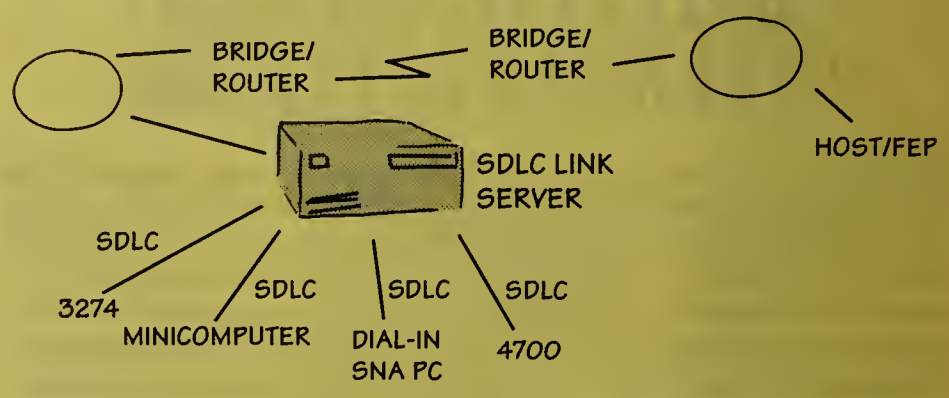

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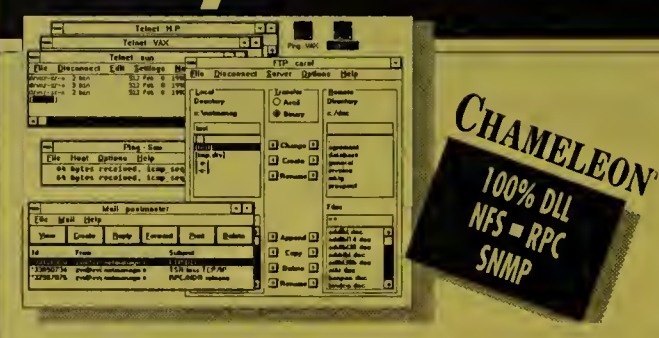

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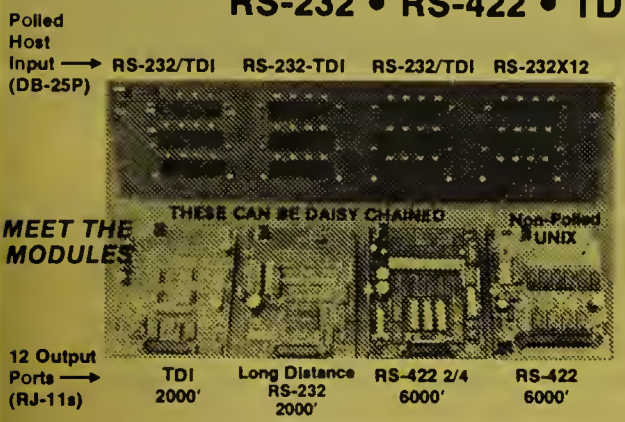

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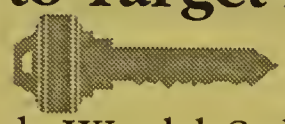

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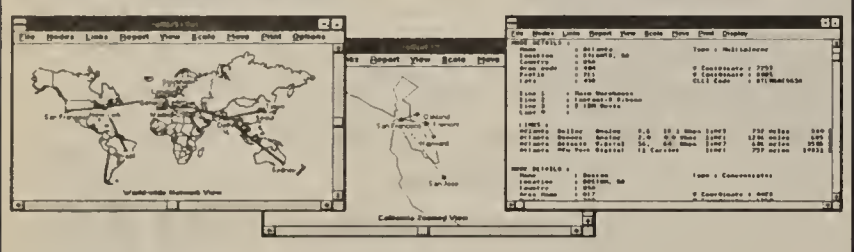

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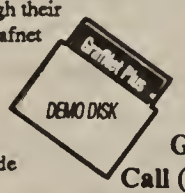

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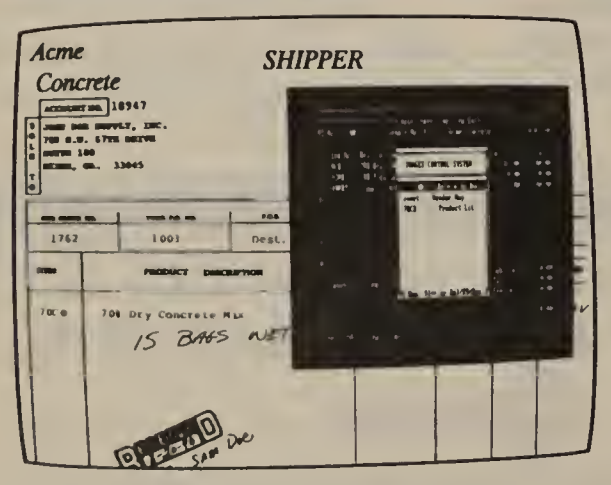

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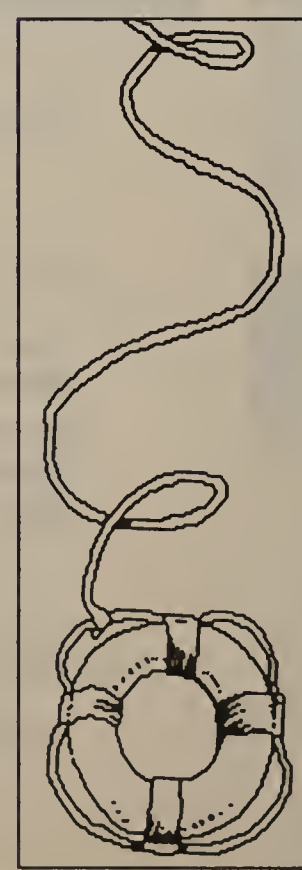

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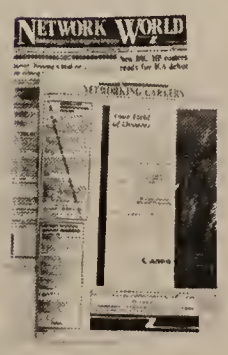

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Taking a look at fraud protection services

continued from page 48

er. Moreover, the fraudulent traffic is not subject to the customer's usual discounting structure. So users could lose more money by reporting the problem. For example, users accustomed to obtaining MCI's peak Vnet discount of 35% could lose money by reporting fraud to obtain a 30% credit.

Carriers limit liability on a per-incident basis, but they define incidents differently. AT&T and Sprint define an incident on a per-location basis, although Sprint's literature says it is per customer premises equipment.

AT&T will not accept liability for fraudulent calling in or out of that location beyond two hours from the time it notifies the customer of fraud. That includes all connected sites, so if a PBX has four sites connected via tie lines, those are also not covered for fraud after the two hours. For Sprint, the time limit is four hours, which is limited to the sites actually affected.

Both carriers' limits apply, even if fraud unrelated to the initial incident occurs. If the customer is hit by a second fraud incident at the same location, chances are the site is not covered.

MCI does not define an incident per se. Its 70-to-30 crediting affects all fraudulent usage on all services. But once a credit is used, the customer is liable for all fraud thereafter, at all sites for all services.

Under NetProtect Enhanced, AT&T requires that a site hit by fraud and all sites directly connected to that site to have additional security measures in place and remain free of fraud for two weeks before it can again be covered. For NetProtect Premium, the limit is 48 hours. For Sprint, a site hit by fraud must stay clean for 30 consecutive days before the liability clause again kicks in. All other sites will maintain the monitoring and liability clause during the 30-day waiting.

Once fraud has been detected, AT&T, MCI and Sprint say they will help users track down criminals. Carriers also help users take proactive steps to avoid fraud.

AT&T provides free training on fraud security, as well as customer-specific training and consultation for a fee. SDN users pay $750 per day. Charges for users of other AT&T services range from $150 to $350 per hour. Sprint has been consulting with users on a customer-specific basis at no cost since 1990. MCI also consults with users free of charge.

Monitoring alone won't cut it

These carrier monitoring programs won't solve all customer problems, but they will help. "There is no silver bullet here," says James Snyder, special counsel-investigations for MCI's Systems Integrity office.

There are hardware and software options for fraud monitoring and prevention that end users can purchase and install on their customer premises equipment. For example, AT&T's Hacker Tracker (priced at $1,995) enables users of AT&T System 75 and 85, as well as Definity PBXs to monitor PBX traffic for fraud. Telco Research Corp. of Nashville sells the TRU Real-Time Toll Fraud Detector for $1,595.

Hacker Tracker and TRU Real-Time Toll Fraud Detector monitor PBX call detail records as they come in. Then, based on user-defined criteria, they generate alarms to notify the user of suspicious activity. Hacker Tracker even calls a preset number to alert a company contact.

Users also need to examine key elements of fraud, such as where the fraud is taking place. While direct-inward system access (DISA) fraud on PBXs has been a concern in the past, it has now disappeared for the most part.

However, hackers today are dialing into voice mail systems or automated attendants and finding ways to make toll calls, especially international calls. Fox says 98% of customer premises equipment fraud consists of international calls, prompting the focus on international monitoring.

Also, some carriers are more exposed than others to fraud. As more carriers launch fraud monitoring programs, those without such initiatives — and their customers — could become targets.

In the end, the burden of averting fraud is on the user. Carriers are not authorized to cut off the fraud problem. They must wait for customer instructions to do so.

"In a lot of instances, if you call the customer to report fraud when it is happening, many times you'll get voice mail or no answer," Fox says.

Briere is president and Cullen is a research associate at TeleChoice, Inc., a Montclair, N.J., consultancy specializing in strategic planning and analysis of intelligent networks, services and applications. They can be reached at (201) 746-0200.

OfficeVision/2 dies; Notes, cc:Mail rise

continued from page 2

would work with Lotus to provide links to the MVS, VM and OS/400 OfficeVision versions.

For now, cc:Mail or Notes users needing access to the other OfficeVision platforms will have to use a gateway IBM resells from business partner Soft-Switch, Inc. or wait for an IBM-developed solution that could be more than a year away, analysts said.

A Lotus spokesman added that IBM will provide a set of services on the host platforms that allows Notes and cc:Mail to interoperate more extensively than by communicating through a gateway.

To help current OfficeVision/2 users — of which IBM said there are about 300 — that want to migrate to Notes and cc:Mail, IBM will provide a gateway in its final version of OfficeVision/2, scheduled for July availability. The gateway will let users access existing OfficeVision/2 applications while migrating to the Notes or cc:Mail environment, said Charles Jones, manager of marketing for IBM's LAN Office.

IBM did not say what it would cost to move users to Notes but said Lotus would be providing most of the customer support programs once the products are in place. IBM will provide migration, design and planning assistance.

"Lotus and IBM will also work to add interfaces to our LAN Office products to allow multiple vendor interoperability," Jones said. This will let Notes users talk to users of other electronic mail packages and let other vendors write applications for the IBM-Lotus platform. He declined to give a time frame for those interfaces.

The demise of OfficeVision/2 ends the product's three-year struggle for user acceptance. Although it offered a number of core office services, such as word processing, E-mail and document processing, it was too slow and complicated.

"We looked at and rejected [OfficeVision/2] a year ago because it was just too slow," said Paul Dolbec, director of distributed equipment services for UNUM Life Insurance Co. in Portland, Maine.

However, Dolbec said the replacement of OfficeVision/2 with Notes and cc: Mail has promise. "We might set up a pilot cc:Mail network," he said. "Since our U.K. office already uses it, we have some experience with it."

But IBM and Lotus have to answer some questions before UNUM will use Notes or cc:Mail. "We need to know if Notes is going to interoperate with the mainframe-based mail systems we already have," he said. Net support and cost are also concerns.

Another user, Keith Sievers, vice-president of MIS and treasurer of Federal Kemper Insurance Co. in Decatur, Ill., said he is happy with IBM's decision to scrap OfficeVision/2 but is concerned about features Lotus Notes doesn't have, such as calendaring.

According to Jones, IBM and Lotus will add a calendaring feature to Notes and directory functions between Notes, cc:Mail and IBM's OfficeVision platforms, but again he offered no time frame. He noted cc:Mail does have a calendaring feature.

For Lotus, this agreement represents more than just gaining IBM's marketing and sales muscle behind Notes and cc:Mail — it also legitimizes the company's products for many large corporate customers.

For IBM, the announcement means an end to a product that was never successful. It also means it is sacrificing some of the cooperative processing promises the OfficeVision big picture held in favor of a product more useful for users today.

SunSoft to expand Solaris' net options

continued from page 19

wide-area support.

Network Information Services Plus (NIS+) is a completely rewritten, distributed hierarchical naming service that will support logical domains and propagate a single change among databases.

The Federated Naming Service, a future enhancement to NIS+, will be able to link disparate naming services running under FSI into a composite naming service. FNS will eventually conform to the composite naming service specification under consideration by X/Open. In the interim, SunSoft will develop its own composite naming conventions.

The improved ONC+ will also let users choose between either Kerberos or DES data authentication, courtesy of FSI technology. Future versions will support popular public key encryption and authentication services from RSA Data Security, Inc., according to Shuttleworth.

ONC+, which is backward compatible with ONC, will include Sun's Transport Independent (TI) Remote Procedure Call (RPC). TI-RPC basically lets vendors create distributed applications that can run on almost any network transport protocol.

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The Great Debate

Monday, June 22, 1992

★ ★ ★ ★ ★ ★ ★ ★

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plane that will support as many as five independent Ethernet LANs.

With the new Ethernet support, the System 3000 hub will now be able to support a maximum of three Fiber Distributed Data Interface rings, two token rings and five Ethernets. The hub previously supported only one Ethernet.

The enhanced Ethernet capabilities were achieved by adding a new backplane that supports four Ethernets and by increasing the capacity of the hub's token-ring bus to add support for a fifth Ethernet.

The LattisSwitch System 3000 Ethernet backplane upgrade and the one that supports Ethernet and token ring are available now and cost $650 and $995, respectively. Backplanes that support Ethernet, token ring and FDDI will be available later this year and will be priced at $2,700.

Switching engine

As part of the announcement, SynOptics also introduced the Model 3328 Ethernet Switching Engine, the module it jointly developed with Kalpana.

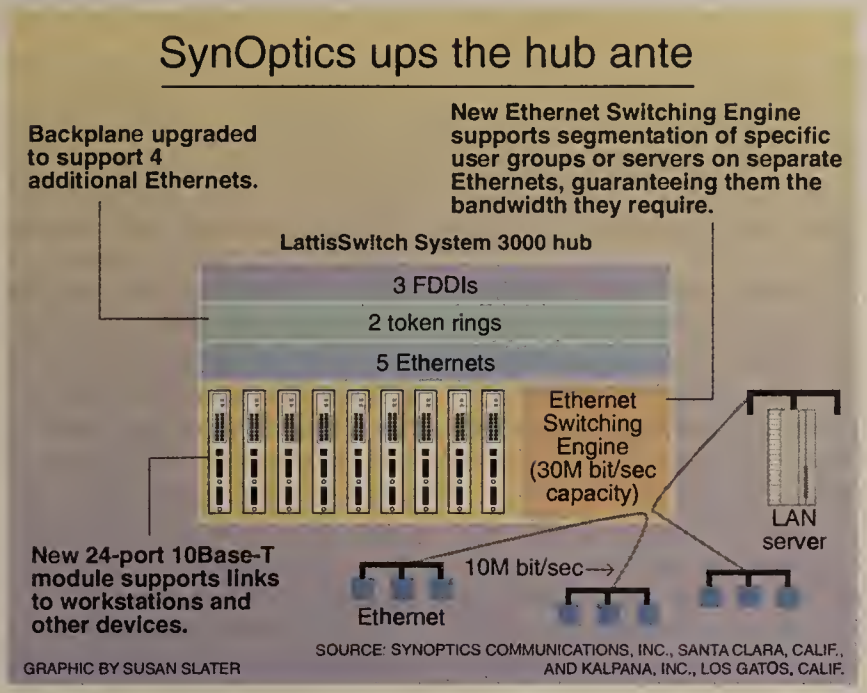
The switching engine has six ports, each of which can be used to support Ethernet segments or dedicated to resources requiring high availability, such as servers.

The matrix in the Model 3328 forges dedicated 10M bit/sec links between the ports and offers on-the-fly switching between segments, meaning attached resources can be linked independently of the hub's backplane.

Because the module has a capacity of 30M bit/sec, any two ports can be communicating at a full 10M bit/sec with no blocked traffic or packet delays.

SynOptics' said its module will have a switching latency of only 40 microsec, whereas multiport bridges — the alternative to linking segments — have a latency of 600 to 800 microsec. That difference can be significant for users that are moving large volumes of traffic.

Theoretically, as many as 11 3328 modules could be used in a single hub, but SynOptics' Bergal said four would be closer to a practical maximum.



The 3328 also serves as SynOptics' next step toward implementing its Asynchronous Transfer Mode (ATM) strategy, according to Bill Lanfri, vice-president of marketing at the company.

"Ethernet switching delivers some of the attributes of ATM, such as multiple parallel conversations and very low latency," he said. "Switching will play a critical role in local-area network communications in the '90s."

Analysts agreed.

"This is an important step toward ATM as well as an initial step in providing more bandwidth per device," said Michael Howard, president of Infonetics Research, Inc., a market research firm in San Jose, Calif. "Dedicated 10M bit/sec is a lot of bandwidth. In some places, it will compete with FDDI to the desktop."

The Model 3328 will cost about $1,000 per switched segment when it becomes available by year end.

SynOptics also announced a new 24-port 10Base-T module. As many as 11 of these modules can fit in the hub, allowing users to attach up to 264 devices to the hub, up from the previous maximum of 132 10Base-T ports. The module will be available by year end and is priced at $3,295.

In addition, a new management module will be available by year end that can be configured to provide port control of all modules, LED status, Autotopology mapping and node security. This module comes in two versions: the 3313A, which has an attachment unit interface port, and the 3314A, which has a Fiber Optic Inter-Repeater Link connection. The products are priced between $3,995 and $6,295.

Compaq to resell NetWare

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Programs are simply SystemPro-optimized NetWare drivers.

To complete the management picture, Compaq will also sell Novell's NetWare Services Manager, a central console similar to Compaq's Insight Manager that gives the administrator information about software on servers in the network.

"We're not just reselling NetWare like some of our competitors; we're adding value to it," Ward said.

In addition, Compaq will introduce four new SystemPro models it claims offer as much as a 70% performance improvement over existing SystemPros.

The new Compaq SystemPro 486/33 machines will be 11-slot models based on the Intel Corp. 33 MHz 80486 microprocessor. The new line will be available in four configurations, with the lowest end Model 1e having no controller or fixed disk drive and the highest end Model 2040e having four 510M-byte drives.

The performance boost will be realized through a new Intelligent Drive Array Controller-2, which is a bus master device that eases I/O bottlenecks by using a faster processor and new 4M-byte Array Accelerator Write Cache.

The Array Accelerator lets the system temporarily store data in memory rather than writing it to disk. "In many cases, the bottleneck can be the time it takes to write information to disk," said Matthew Cain, senior research analyst at META Group, a consulting firm based in Westport, Conn. "The Write Cache lets the system think information is being written to disk although it's really being stored in memory."

The information is then written to disk when the system is not as busy. And the new NEC Corp. V53 processor executes instructions as much as 60% faster than the previous processor.

The new machines are available now with prices ranging from $11,799 to $22,999.

In conjunction with the release of the new machines, Compaq this week will cut prices on all its existing Intel 80486-based servers. The largest cut will be more than $5,000 off the price of the Compaq SystemPro 486/33-240 to $22,299 from $27,999.

NetWare 3.11 from Compaq will be available next month at prices ranging from $1,095 for a five-user version to $12,495 for a 250-user version.

Intrepid user braves risks

continued from page 1

velopment and maintenance costs, improve data integrity and provide users with better access to corporate data, easing decision-making.

"We need [systems] that can respond immediately to different marketing decisions," said Bonnie Van Overbeke, vice-president of MIS. "Our business is moving so rapidly that traditional systems development cycles are completely inadequate."

Ultimately, Kash n' Karry's systems will not consist of traditional applications, but rather "views" of the company that can be pieced together in real-time by the interaction of objects exchanging messages and data across a network. Objects are pieces of code and data that represent fundamental components of a company's business operations.

Instead of accessing predefined applications, users interact directly with objects represented on their computer screens by icons. These icons might represent a store, a manager, a scanning terminal, a printer or merchandise item. Users can query objects to obtain information they need to complete a monthly store sales report, for example, or record business transactions, such as sales and deliveries.

In addition, users can embed rules-based logic into icons to enable them to handle many routine functions.

Object-oriented computing turns end users into ad hoc programmers and reduces the need for development staff, said Jim Stikeleather, manager of systems development at Kash n' Karry.

"Ultimately, we will have one large network in which stores and offices become transparent and data resides somewhere on the network and is available to anyone who needs it in a format they can readily use," Van Overbeke said.

But the promise of distributed object-oriented computing has its risks. Few users have implemented distributed object computing systems, forcing Kash n' Karry to build systems largely through trial and error. And few vendors have any expertise in object-oriented computing or offer adequate tools to build such systems, despite claims to the contrary, Stikeleather said.

The company has had to replace about 70% of its original information systems (IS) development staff since beginning the project. Many of the original developers had trouble adapting to the object-oriented architecture and did not want to move off the mainframe. The company hired a number of Unix programmers with diverse backgrounds and now has a stable staff, he added.

In addition, the company expects to pay an additional 12% on top of its $6 million annual IS budget for the next several years to fund development work and purchase hardware, software and network components, according to Raymond Springer, chief financial officer at Kash n' Karry.

Stiff competition

Few companies are willing to take such risks, but Kash n' Karry is driven by several factors. It is facing heightened competition from mass merchandisers, price clubs and specialty retailers that are beginning to sell traditional grocery items. Its current IS networks are 25-years-old and difficult to modify.

To make distributed object computing a reality, Kash n' Karry has had to develop its own object-oriented programming language based on C++, an object database, an object request facility and a user interface, among other things.

Kash n' Karry also has had to build a robust network capable of supporting a distributed object computing environment. It will soon replace a 10M bit/sec Ethernet backbone with a 100M bit/sec Fiber Distributed Data Interface network. The dual-ring FDDI net will support six Unix-based object repository servers and 15 Unix-based object servers. The object servers will support about 250 X terminals linked in Ethernet subnets.

Kash n' Karry implemented an FDDI network to support the large amounts of traffic distributed object computing will generate as well as to support image applications in the future, according to Don Rimel, technical service lead at the firm.

The object servers, which are Sun Microsystems, Inc. SPARC 2 stations, support object request software, which processes user queries or business events and sends a message to an object manager.

The object manager is a software layer that sits on an Informix Software, Inc. relational database running on a Sun 470 or 670 Unix processor. It locates objects in the relational database and ties them back to the requester so that users can interact directly with the objects to get needed information. The object manager also stores objects in the database that were created as a result of a business transaction or event, and it sends messages across the network when objects in its domain need the services of objects on other servers.

Kash n' Karry plans to migrate the new architecture to all its stores by mid-1993.

Newbridge to unveil switch

continued from page 50

termine if they are "good" before processing them. The 36120 assumes frames are good and processes them immediately, Michaels said.

Analysts said Newbridge has the best implementation of the V.120 standard to date.

"V.120 is one of those strange things that looks like it should be implemented uniformly, but some implementations are suboptimal," said analyst Howard Hecht of Gartner Group, Inc., a Stamford, Conn., consultancy. "Newbridge is able to account for packets a bit better" than other products that support V.120. "The 36120 can determine the need for bursts and allocate bursts on a more defined basis."

The switch achieves this by allowing users to set limits on burst rates for each permanent virtual circuit, Michaels said.

PTE functions

In addition to the V.120 segmentation/reassembly capability, the 36120's PTE cards attach to the packet and circuit switching busses and process frame relay traffic. The PTEs handle routing and congestion control while also monitoring the status of permanent virtual circuits.

The switch supports as many as 64 PTEs, each providing a combined circuit I/O bandwidth of 4M bit/sec. Each PTE has a throughput of 8,000 frame/sec. In addition, each supports 4,000 permanent virtual circuits and up to 60 frame relay channels.

The frame relay channels connect the switch to the frame relay interfaces of bridges, routers, other switches and host computers.

Network managers can partition users and applications onto separate PTEs to minimize congestion and consumption of processing cycles, Michaels said.

Pricing for the 36120 starts at $25,000. It will be generally available this fall.

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Vendors cook up recipes for ISDN

continued from page 15

But the telephones had proprietary software and could not accommodate the configuration.

One government user attending the North America ISDN Users' Forum (NIUF) meeting last week, who requested anonymity, said an applications catalog may help reassure users that ISDN is real.

"A lot of users are very disenchanted with the way ISDN is going. If they don't get out a catalog by the end of the year, I have a feeling that users are going to lose a lot of interest in this technology," he said.

Vendors agree that there has been confusion about ISDN, and they want to change that. Greg Ratta, an ISDN specialist at Bell Communications Research who suggested the ISDN catalog, said such a publication will help users see how to apply ISDN to their businesses.

The catalog is meant to stimulate thought, Ratta said. "It will begin to get people to appreciate what the possibilities are with ISDN," he said.

Applications chosen for inclusion in the catalog were pulled from a survey conducted with users in the NIUF last November. The users identified applications that would be the most useful to their businesses.

Some of the applications may leapfrog the normal process through which users submit applications to the vendors who develop official application profiles for the NIUF, Ratta said.

The catalog will differ from a similar book being published in October that will outline applications being demonstrated as part of a national ISDN trial, dubbed TRIP '92.

Int'l ISDN net on the way

GAITHERSBURG, Md. — Officials from the North American ISDN Users Forum and Bell Communications Research last week filled in some of the details about the multivendor transcontinental ISDN demonstration network it plans to cut over in November.

The network, dubbed the Transcontinental Integrated Services Digital Network Project (TRIP) '92, will include 63 user and vendor participants in 60 cities worldwide ("COS, Bellcore striving to make TRIP a net of dreams," *NW*, May 4). Countries scheduled to participate include the U.S., Canada, France, England, Germany and Japan.

TRIP '92 is designed to show users that ISDN services, equipment and software from multiple vendors can interoperate. Until now, ISDN vendors have implemented multiple options within the ISDN standard, which rendered many offerings incompatible. All products and services in TRIP '92 will be based on National ISDN-1, a common version of ISDN agreed to by industry participants.

AT&T and MCI Communications Corp. will provide interexchange services, while local service will be provided by the regional Bell holding companies and independent local carriers.

Users that have agreed to participate include IBM, NCR Corp., Eastman Kodak Co., Prodigy Services, Inc., West Virginia University, Federal National Mortgage Association (Fannie Mae), Canon U.S.A., Inc., Jet Propulsion Laboratories, JCPenney Company, Inc., the Internal Revenue Service, the General Services Administration, the Department of Veterans Affairs, the state of Delaware and the University of Cincinnati.

Vendors include France Telecom, Fujitsu America, Inc., Siemens Communications Systems, Inc., Northern Telecom, Inc., Teleos Communications, Inc., Communications Satellite Corp., Hitachi, Ltd. and Rolm Co.

— Anita Taff

Group rolls out technical specs

continued from page 15

because its API did not support performance levels adequate for all types of database access. The Phase II implementation with CLI addresses these concerns by building a higher degree of functionality and performance into the API standard.

Plus, by adding support for TCP/IP, the specification will broaden the connectivity options for SQL Access-compliant products, especially in client/server configurations.

According to Cohen, both specifications are out for review with SQL Access members and X/Open Company, Ltd., a consortium of computer vendors trying to develop a specification that would make it possible to port applications across systems from different vendors. The SQL Access Group is currently working with X/Open on a publication schedule. Additionally, at the request of ANSI, the group will submit the finished CLI to the ANSI/SQL (X3H2) committee.

"This specification is one of the bright spots on the horizon for achieving database interoperability," said Kevin O'Neill, vice-president of the Business Research Group, a consulting firm in Newton, Mass. "Yet the proof of its usefulness will be in the number of compliant products that are delivered."

Future plans

The SQL Access Group is now moving ahead on several fronts: developing conformance tests for SQL Access specifications, initiating Phase III work items and planning for a major product demonstration next year.

Cohen contends that it is important to strike a balance and not let the specifications get too far ahead of actual products. To ensure that, the group will allow its members to spend more time putting their efforts into product development and allow Phase III work to move ahead slowly.

One product that the SQL Access Group is particularly enthusiastic about is Microsoft's Open Database Connectivity (ODBC) interface which uses the CLI specification to allow applications running on Microsoft Windows and other platforms to communicate with both relational and nonrelational database management systems.

ODBC is scheduled to be available this year, along with a core set of ODBC drivers which will ensure a minimum level of data access capabilities from the start.

In addition, the SQL Access Group is now planning Phase III work that will address stored procedures and two-phase commit, which ensures data integrity over a distributed net. Stored procedures is a more elaborate implementation of SQL that supports SQL statements, control flow statements and language embedding. The group expects to begin formal discussions of Phase III work at its meeting this month.

Six companies recently joined the SQL Access Group, bringing total consortium membership to 43 companies. The new members are Information Builders, Inc., JYACC, Inc., Siemens Nixdorf Information Systems, Inc., MUST Software International, VMARK Software, Inc. and Cognos, Inc.

Carrier to begin offering SMDS

continued from page 2

er this year, Mixon said.

Firms in that area will be able to buy SMDS service bundled with the access line or provide their own. GTE Telephone will charge a $700 flat monthly rate and a onetime $1,000 installation fee for service, including access. Without access, it will cost $575 a month and a onetime $25 charge.

In comparison, Bell Atlantic Corp. operating companies are rolling out SMDS services that cost from $500 to $650 monthly, with a $1,000 onetime charge.

Analysts said MegaConnect will be an attractive alternative to dedicated lines for local-area network interconnection. Mixon said GTE Telephone expects to eventually lose 20% to 40% of its T-1 and T-3 links to SMDS.

Tom Nolle, president of CIMI Corp., a Voorhees, N.J., consulting and research firm, recently completed a 167-user SMDS survey that gauged price sensitivity among potential customers.

"SMDS is not viable once it's priced above $850 or more a month," Nolle said. "After $850, most users won't touch SMDS."

GTE Telephone eventually plans to offer customers usage-sensitive SMDS pricing once its billing system has been enhanced to support it. GTE Telephone is the first phone company to announce support for usage-sensitive SMDS pricing.

Carriers say customers that use SMDS heavily will prefer the flat rate, while others would opt for usage-sensitive billing.

GTE Telephone announced plans to offer optional network management capabilities based on specifications from Bell Communications Research, which has spearheaded SMDS development. From an on-site terminal, customers will be able to use the SMDS link to access traffic statistics and monitor circuit status.

DEC to unveil E-mail tools

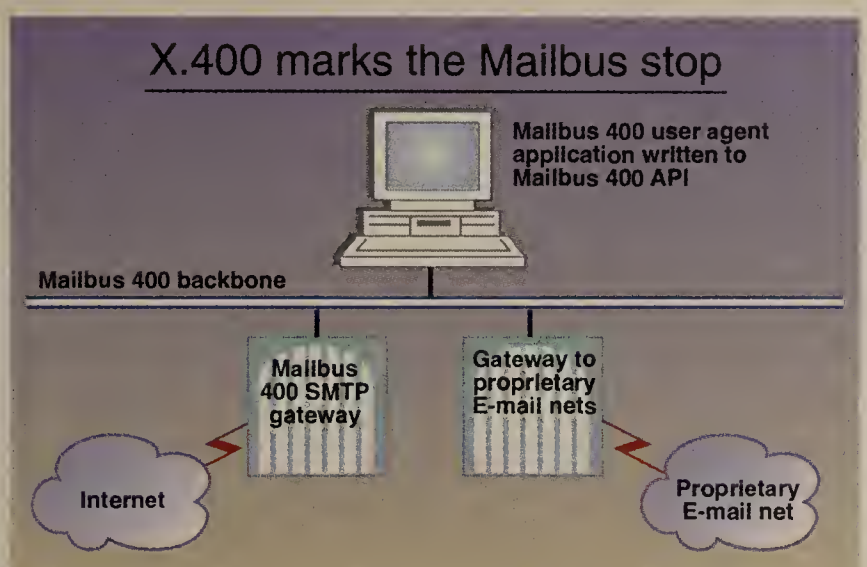
continued from page 1

way to the Internet and an application program interface (API) for developing messaging applications.

Most of DEC's current Mailbus products run under the vendor's proprietary VMS operating system. The Ultrix-based Mailbus 400 marks not only the first time DEC has developed a Unix version of a Mailbus MTA, but also the vendor's first native implementation of the X.400 standard.

DEC's E-mail rollout comes on the heels of a similar announcement by Soft-Switch, one of the leading vendors of E-mail gateways. Traditionally a developer of E-mail packages for IBM mainframes, Soft-Switch last week brought out gateway software that runs under Unix on Data General Corp. RISC-based AViiON workstations ("Soft-Switch to downsize E-mail switch," *NW*, June 1).

The MTA allows users to exchange messages with DEC's or other vendors' MTAs that support either the 1988 or 1984 versions of the X.400 standard. Those users can also link to non-X.400 mail systems through gateway software residing on the same platform as the MTA.



User agent and gateway applications written to DEC's new Mailbus 400 API can link Mailbus 400 and non-Mailbus users to DEC's new Ultrix-based X.400 backbone. DEC will also deliver a gateway that lets Mailbus 400 and Simple Mail Transfer Protocol users exchange messages.

GRAPHIC BY SUSAN SLATER SOURCE: DIGITAL EQUIPMENT CORP., MAYNARD, MASS.

The MTA supports an X.500 directory service, which is a database that holds routing tables so MTAs can direct messages to the appropriate destination.

Other new products

In addition to the MTA, DEC also announced two other Mailbus 400 products, a Simple Mail Transfer Protocol (SMTP) Gateway and an API.

The SMTP Gateway performs X.400-to-SMTP protocol conversion so Mailbus 400 users can exchange messages with users of the Internet and other Transmission Control Protocol/Internet Protocol networks, and vice versa. The API allows users to develop user agent and gateway applications that work with the Mailbus 400 MTA.

Analysts said Ultrix will not go far enough in enticing new customers to adopt Mailbus 400. "When it's available on more platforms, potentially DEC can become a strong player in the E-mail world," said Kristina Filistowicz of Dataquest, Inc. in San Jose.

DEC has plans to expand Mailbus 400 to VMS later this year, to OSF/1 next year and to its Alpha platform sometime thereafter.

If DEC ports Mailbus 400 to its Alpha systems running Microsoft Corp.'s Windows NT operating system, "That's when it starts to get important," Filistowicz said. "Once it's available on Alpha and Windows NT, DEC will start capturing the desktop audience, which is really where the big audience is."

DEC is discussing the idea of porting Mailbus 400 to Windows NT, according to Audrey Augun, DEC's Mailbus marketing manager.

The Mailbus 400 MTA is priced from $10,000 to $35,000, depending on the CPU. The Mailbus SMTP Gateway is priced at $7,000, and the Mailbus API ranges in price from $3,300 to $46,700. All products will be available in August.

Soft-Switch introduces E-mail backbone switch

By Bob Brown
Senior Editor

WAYNE, Pa. — As expected, Soft-Switch, Inc. last week introduced its next-generation product line — a series of 1988 X.400-based electronic mail switches based on Unix hardware and related network management software.

Soft-Switch's new Enterprise Mail Exchange (EMX) switches are turnkey hardware and software offerings based on Data General Corp.'s Unix-based AViiON servers (see graphic, this page). The five EMX models, which were code-named Spyder, are designed to serve as flexibly priced messaging backbone switches — platforms that provide mail exchange and directory services for disparate mail systems across an enterprise ("Soft-Switch to downsize E-mail switch," *NW*, June 1).

Michael Zisman, president and chief executive officer at Soft-Switch, said the EMX switches can be used as X.400 messaging and X.500 directory servers linking multivendor E-mail systems supporting X.400. They can also be used as backbone switches for proprietary E-mail systems or to provide a migration path from proprietary E-mail to standards-based systems.

In addition to the new switches, Soft-Switch also unveiled the Enterprise Mail Manager (EMM), an X Window System- and Motif-based system for managing E-mail networks supported by the EMX switches. EMM supports configuration and maintenance from a local or remote terminal or workstation and enables a user to graphically view a network of EMX switches.

The rollout of the products that were three years in the making marks a major expansion of Soft-Switch's product line, which is anchored by the IBM-host based Soft-Switch Central messaging switch. Zisman said he expects that EMX revenue will beat out Soft-Switch Central earnings next year.

James Rathmann, senior vice-president of operations at Soft-Switch, said his company has no immediate plans to migrate EMX to other Unix platforms, although such flexibility is built into the software.

Each model includes a relational database management system from Oracle Corp. that supports the subscriber directory and configuration database.

The models, ranging from the EMX 1000 to the EMX 8000, differ based on the number of messages they can switch per hour, the amount of memory on the hardware and the number of basic mail protocols supported.

Those are X.400, Systems Network Architecture Distribution Services, Simple Mail Transfer Protocol and the Soft-Switch Network Application Program Interface for tying mail-enabled applications to E-mail systems.

Pricing for Soft-Switch's EMX and EMM products will vary depending on configuration but range from about $30,000 to more than $300,000.

The EMX switches and EMM are in beta test at an unspecified number of user sites. Most of the EMX models will be available in the U.S. during the third quarter. X.500 protocols will be provided in a year-end release.

According to Walter Ulrich, a director and industry consultant at Arthur D. Little, Inc. in Los Angeles, the Soft-Switch product rollout "heralds the move away from mainframe E-mail to LAN-based E-mail systems."

Don Price, a technologist at Texaco, Inc., a Tulsa, Okla., petroleum company, has been testing a mid-range EMX switch in a laboratory and is looking at using the EMX either at remote locations to replace multiple gateway products from various vendors, as an international gateway switch or as a low-cost replacement for the company's host-based Soft-Switch Central messaging switch.

"We're processing 1,000 messages an hour [on Soft-Switch Central], and we expect to be able to do at least that much with EMX," he said.

Soft-Switch's Enterprise Mail Exchange

Model	Processor	Memory (bit/sec)	Mail protocols	Price
EMX 1000	1 CPU at 29 MIPS	48M	2	$29,995 to $39,995
EMX 2000	1 CPU at 39 MIPS	64M	4	$80,000 to $100,000
EMX 4000	2 CPUs at 78 MIPS	96M	4	$140,000 to $175,000
EMX 6000	2 CPUs at 78 MIPS	96M	4	$150,000 to $180,000
EMX 8000	4 CPUs at 117 MIPS	160M	4	$260,000 to $320,000

MIPS = Million instructions per second

GRAPHIC BY SUSAN SLATER SOURCE: SOFT-SWITCH, INC., WAYNE, PA.

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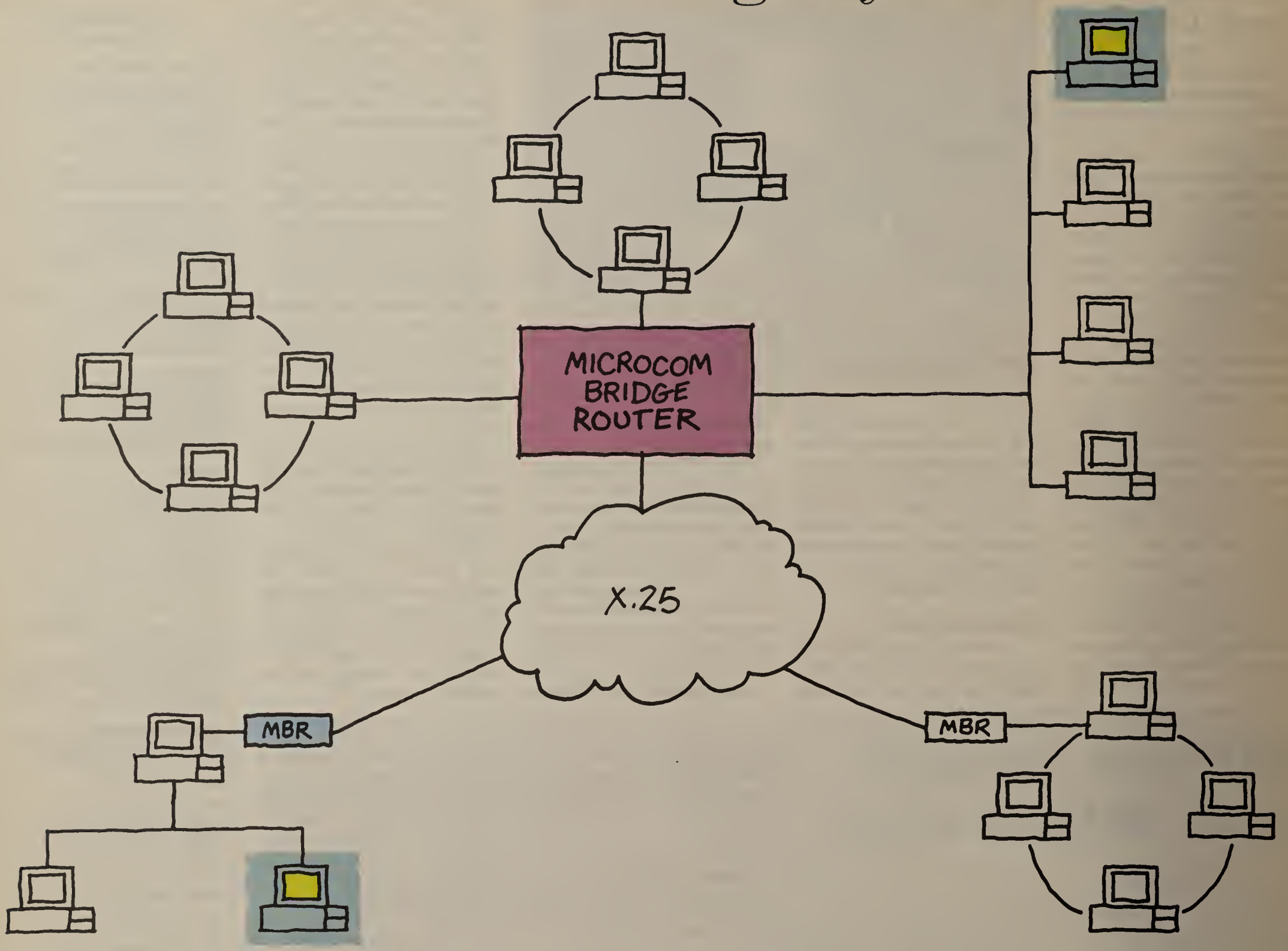

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